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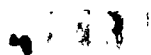
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American Anthropologist

NEW SERIES



ORGAN OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION,
THE ANTHROPOLOGICAL SOCIETY OF
WASHINGTON, AND THE AMERICAN
ETHNOLOGICAL SOCIETY OF
NEW YORK

ROBERT H. LOWIE, *Editor*, Berkeley, California

FRANK G. SPECK, T. H. H. ROBERTS, and E. W. GIFFORD, *Associate Editors*

VOLUME 34

1932



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KRAUS REPRINT CORPORATION, NEW YORK 17, N.Y.

1962

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PRINTED IN THE UNITED STATES OF AMERICA

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American Anthropologist

NEW SERIES

Vol. 34

JANUARY-MARCH, 1932

No. 1

CONFIGURATIONS OF CULTURE IN NORTH AMERICA

By RUTH BENEDICT

IN THE past twenty-five years the fact of prime importance in anthropology has without doubt been the accumulation of a few full-length portraits of primitive peoples. It is hard to think back to a time when as yet the chance of reconstructing even a passable picture of any primitive tribe was limited to two or three regions, each of them beset with difficulties. The best accounts that were available were not the outcome of any purposeful inquiry on the part of students of custom, but of the lucky chances that had brought together a good observer and a striking culture, the records of Sahagun, for instance, or Codrington in Melanesia.

The vast amount of available anthropological material was frankly anecdotal as in travelers' accounts, or schematically dissected and tabulated as in many ethnologists'. Under the circumstances general anthropological discussion of necessity had recourse, as in Tylor's day, to the comparative method, which is by definition anecdotal and schematic. It sought by collecting great series of observations detached from their context to build up "the" primitive mind, or "the" development of religion, or "the" history of marriage.

Out of the necessities of the same situation there flourished also the schools of strict diffusionists who made a virtue out of the limitations of materials at their disposal and operated solely with detached objects, never with their setting or function in the culture from which they came.

The growing dissatisfaction with these two dominant theoretical approaches of what we may well call the anecdotal period of ethnology has always been explicit in Boas' insistence upon exhaustive study of any primitive culture, and is today most clearly voiced by Malinowski. His vigor is directed against the diffusionist group rather than against the Frazers and the Westermarcks of the comparative method, but in his own work he insists always that anthropological theory must take into account not detached items but human cultures as organic and functioning wholes. He would have us realize that when a museum collection has been installed from the Niam-Niam or a monograph of like type has been published we

still know in reality exactly nothing about them unless we know the way in which the arrangement of the house, the articles of dress, the rules of avoidance or of marriage, the ideas of the supernatural—how each object and culture trait, in other words, is employed in their native life. Malinowski, somewhat disappointingly, does not go on to the examination of these cultural wholes, but is content to conclude his argument with pointing out in each context that each trait functions in the total cultural complex, a conclusion which seems increasingly the beginning of inquiry rather than its peroration. For it is a position that leads directly to the necessity of investigating in what sort of a whole these traits are functioning, and what reference they bear to the total culture. In how far do the traits achieve an organic interrelation? Are the *Leitmotive* in the world by which they may be integrated many or few? These questions the functionalists do not ask.

Now the fact that becomes increasingly apparent as full-length accounts of primitive peoples come from the press is that these cultures, though they are so overwhelmingly made up of disparate elements fortuitously assembled from all directions by diffusion, are none the less over and over again in different tribes integrated according to very different and individual patterns. The order that is achieved is not merely the reflection of the fact that each trait has a pragmatic function that it performs—which is much like a great discovery in physiology that the normal eye sees and the normally muscled hand grasps, or, still more exactly, the discovery that nothing exists in human life that mankind has not espoused and rationalized. The order is due rather to the circumstance that in these societies a principle has been set up according to which the assembled cultural material is made over into consistent patterns in accordance with certain inner necessities that have developed within the group. These syntheses are of various sorts. For some of them we have convenient terminology and for some we have not. But they are in each case the more or less successful attainment of integrated behavior, an attainment that is all the more striking for the anthropologist because of his knowledge of the scattered and hybrid materials out of which the integration has been achieved.

The proposition that cultures must be studied from this point of view and that it is crucial in an understanding even of our own cultural history has been put forward by the German school headed by Wilhelm Dilthey and popularly represented in English-speaking countries by Oswald Spengler in his *Untergang des Abendlandes*.¹ For this philosophical school, history is the succession of culturally organized philosophies of life, and philosophy is the study of these great readings of life. For Dilthey himself the emphasis

¹ English translation: *The Decline of the West*. 2 vols. New York, 1929 and 1930.

is only secondarily and as it were accidentally on the configuration of culture itself to express these varied readings of life. His primary emphasis is upon these great interpretations as expressing the variety of existence and is directed against the assumption that any one of them can be final. He argues vigorously that essential configurations in philosophy are incommensurable and that their fundamental categories cannot be resolved the one into the other.

His most systematic study, the *Einleitung in die Geisteswissenschaften*, is frankly historically descriptive. When he does become systematic, his groupings are not configurations at all but personality types in philosophy; he groups Democritus, Epicurus, Hobbes, and the French Encyclopedists as exemplifying his "materialist-positivist" type, over against which he sets a type of objective idealist and the idealist of freedom, both of them as eclectically selected from different nations and ages. He has, however, in his less systematic essays well characterized certain cultural attitudes significant in the period of Frederick the Great and in the medieval period, and he often makes use of cultural points. E. Spranger's² elaboration of types is a priori and subjective, not drawn from the study of history. He presents as his types the man of theory, economic man, aesthetic man, man as gregarious, man as exemplifying a will to power, man as religious.

Spengler, however, has elaborated the cultural aspect of the philosophy of his school. He has avoided their attempt to define and limit "the" types that may occur. For him the "destiny ideas" whatever they may be that evolve within a culture and give it individuality are what is dynamic and challenging in human life. These have differed profoundly one from another, and they condition their carriers so that certain beliefs and certain blindnesses are inevitable to them. Each great culture has taken a certain direction not taken by another, it has developed beliefs and institutions until they are the expression of this fundamental orientation, and the full working out of this unique and highly individualized attitude toward life is what is significant in that cultural epoch. His study makes a confused impression owing to its discursiveness and the unresolved complexities of the civilizations with which he deals. From an anthropological point of view the fundamental criticism of his work is that it involves treating modern stratified civilization as if it had the essential homogeneity of a primitive culture. His picture, especially of the modern world-view which he calls the Faustian, is only one of the integrated pictures that could validly be drawn for modern man. It needs to be balanced by a picture of a Babbitt or a Roosevelt, for instance. Even at that, what with his rather mystic consideration

² Eduard Spranger, *Types of Men*. English translation by Paul J. W. Pigors. Halle, 1928.

of numbers, of architecture, of music, of painting, of will, space, and time, the definition of his types becomes confused, and the identification of his different Faustian "destiny ideas" in mathematics, finance, philosophy, and morals hard to make out.

The fundamental principle of the philosophy of Dilthey and his school has remained in its application to the civilization of western Europe stimulating and provocative rather than convincing. The difficulty, which Dilthey himself largely avoided by stressing primarily the dominant drives in philosophy instead of in cultures at large, in Spengler is very clear; historical data of western Europe are too complex and cultural stratification too thoroughgoing to yield itself in our present state of historical knowledge to the necessary analysis.

It is one of the philosophical justifications for the study of primitive peoples that ethnological data may make clear fundamental social facts that are otherwise confused and not open to demonstration. Of these none seem to me more important than this of fundamental and distinctive configurations in culture that so pattern existence and condition the emotional and cognitive reactions of its carriers that they become incommensurables, each specializing in certain selected types of behavior and each ruling out the behavior proper to its opposites.

I have recently examined from this point of view two types of cultures represented in the Southwest,³ that of the Pueblo contrasted with those of the various surrounding peoples. I have called the *ethos* of the Pueblo Apollonian in Nietzsche's sense of the cultural pursuit of sobriety, of measure, of the distrust of excess and orgy. On the other hand Nietzsche's contrasted type, the Dionysian, is abundantly illustrated in all the surrounding cultures. It values excess as escape to an order of existence beyond that of the five senses, and finds its expression in the creation in culture of painful and dangerous experiences, and in the cultivation of emotional and psychic excesses, in drunkenness, in dreams, and in trance.

The situation in the Southwest gives an exceptionally good opportunity for the study of the extent to which contrasted psychological sets of this sort, once they have become institutionalized, can shape the resulting cultures. The Pueblo are a clearly marked-off civilization of very considerable known antiquity, islanded in the midst of highly divergent cultures. But this islanding of their culture cannot be set down as in Oceania to the facts of the physical environment. There are no mountain ranges, no impassable deserts, not even many miles that separate them from their neighbors. It is a cultural islanding achieved almost in the face of geographical conditions.

³ Psychological Types in the Cultures of the Southwest. ICA 23: 572-581, 1928.

The eastern Pueblo went regularly to the plains for the buffalo hunt, and the center of the Pima country is within a day's run on foot of Hopi and Zuñi. The fact therefore that they have a complex culture set off as strikingly as any in North America from that of their impinging neighbors makes the situation unmistakable. The resistance that has kept out of the Pueblo⁴ such traits as that of the guardian spirit and the vision, the shaman, the torture, the orgy, the cultural use of intoxicants, the ideas of mystic danger associated with sex, initiative of the individual and personal authority in social affairs, is a cultural resistance, not the result of an isolation due to physical facts of the environment.

The culture of the southwest Pueblo, as I have pointed out in the article referred to above, is a thoroughgoing, institutionalized elaboration of the theme of sobriety and restraint in behavior. This dominating theme has effectually prevented the development of those typical Dionysian situations which most North American tribes elaborate out of every phase of life, cultivating abandon and emotional excesses, and making birth, adolescence, menstruation, the dead, the taking of life, and any other life crises ambivalently charged occasions fraught with danger and with power. It has likewise refused such traits of surrounding cultures as self-torture, ceremonially used drugs, and the inspirational vision, along with all the authority that is usually derived from personal contact with the supernatural, i.e., shamanism. It hates disruptive impulses in the individual—I speak in an animistic shorthand, meaning that their cultural bias is opposed to and finally pares down to a minimum the potential human impulses to see visions and experiment in indulgences and work off its energy in excesses of the flesh.

Among these disruptive impulses the Pueblo *ethos* counts also the will to power. Just as surely as it has acted to obliterate self-torture it has acted to obliterate the human impulse toward the exercise of authority. Their ideal man avoids authority in the home or in public office. He has office at last thrust upon him, but even at that the culture has already taken away from the position he has to occupy anything that approaches personal authority in our sense; it remains a position of trust, a center of reference in planning the communal program, not much more.

Sanction for all acts comes always from the formal structure, not from the individual. He may not kill unless he has the power of the scalp or is planning to be initiated into it—that is, into the organized war society. He may not doctor because he knows how or acquires sanction from any personal encounter with the supernatural, but because he has bought his way

⁴ *Op. cit.*, 573 ff.

up to the highest rank in the curing societies. Even if he is the chief priest he will not plant a prayer stick except at the institutionally prescribed seasons; if he does he will be regarded as practicing sorcery, as, according to the point of tales in which this situation occurs, he is indeed. The individual devotes himself therefore to the constituted forms of his society. He takes part in all cult activity, and according to his means will increase the number of masks possessed in Zuñi by having one made for himself—which involves feasting and considerable expense. He will undertake to sponsor the calendric kachina dances; he will entertain them at the great winter dance by building them a new house and assuming the expenses of his share of the ceremony. But he does all this with an anonymity that is hard to duplicate from other cultures. He does not undertake them as bids for personal prestige. Socially the good man never raises himself above his neighbor by displaying authority. He sets everyone at his ease, he “talks lots,” he gives no occasion for offense. He is never violent, nor at the mercy of his emotions.

The whole interest of the culture is directed toward providing for every situation sets of rules and practices by means of which one gets by without resort to the violence and disruption that their culture distrusts. Even fertility practices, associated so universally in other cultures with excess and orgy, though they make them the leading motif of their religion,⁵ are non-erotic rites based on analogies and sympathetic magic. I shall discuss later the thoroughness with which their rites of mourning are designed to this same end.

Such configurations of culture, built around certain selected human traits and working toward the obliteration of others are of first-rate importance in the understanding of culture. Traits objectively similar and genetically allied may be utilized in different configurations, it may be, without change in detail. The relevant facts are the emotional background against which the act takes place in the two cultures. It will illustrate this if we imagine the Pueblo snake dance in the setting of our own society. Among the western Pueblo, at least, repulsion is hardly felt for the snake. They have no physiological shudder at the touch of its body; in the ceremony, they are not flying in the face of a deep antipathy and horror. When we identify ourselves with them we are emotionally poles apart, though we put ourselves meticulously into the pattern of their behavior. For them, the poison of the rattlesnakes being removed, the whole procedure is upon the level of a dance with eagles or with kittens. It is a completely charac-

⁵ H. K. Haeblerlin, *The Idea of Fertilization in the Culture of the Pueblo Indians*. AAA-M 3, no. 1, 1916.

teristic Apollonian dance expression, whereas with us, with our emotional reaction to the snake, the dance is not possible upon this level. Without changing an item of the outward behavior of the dance, its emotional significance and its functioning in the culture are reversed. And yet often enough, in ethnographic monographs, we are at a loss to know this emotional background even in traits where it becomes of first-rate importance, as for instance in the feeling directed toward the corpse. We need much more relevant data from the field in order to evaluate the emotional background.

The more usual situation is the one in which the trait is reworked to express the different emotional patterning characteristic of the culture that has adopted it. This reworking of widespread behavior traits into different configurations of culture can only be adequately described when there is a much greater body of field data presented from this angle, and a much greater agreement has been arrived at among anthropologists as to the relevant patternings. There are however certain configurations of culture that are clear from the existing monographs, and not only, nor chiefly perhaps, from America. However in order to establish the validity of the argument I am presenting, I shall limit myself to traits diffused over this continent and discuss only well-known North American cultural traits and the way in which they have been shaped by the dominant drives of certain contrasted cultures.

I have already referred to death practices. There are two aspects involved in death practices which I shall consider separately: on the one hand, the bereavement situation, and on the other, the situation of the individual who has killed another.

The bereavement situation is characteristically handled in Dionysian and in Apollonian cultures according to their bias. Dionysian behavior for the bereaved has found several different channels of expression in the region we are discussing in North America. Among the western Plains it was a violent expression of loss and upheaval. Abandon took the form of self-mutilation, especially for women. They gashed their heads, their calves, they cut off fingers. Long lines of women marched through camp after the death of an important person, their legs bare and bleeding. The blood on their heads and legs they let cake and did not remove. When the body was taken out for burial everything in the lodge was thrown on the ground for any that were not relatives to possess themselves of it. The lodge was pulled down and given to another. Soon everything was gone and the widow had nothing left but the blanket about her. At the grave the man's favorite horses were killed and both men and women wailed for the dead. A wife or

daughter might remain at the grave, wailing and refusing to eat, for twenty-four hours, until her relatives dragged her away. At intervals, even twenty years after a death had occurred, on passing the grave they cried for the dead.⁶

On the death of children especially, abandon of grief is described as being indulged. Suicide is often resorted to by one parent or the other. According to Denig, among the Assiniboiné:

should anyone offend the parent during this time his death would most certainly follow, as the man, being in profound sorrow, seeks something on which to wreak his revenge, and he soon after goes to war, to kill or be killed, either being immaterial to him in that state.⁷

Such descriptions are characteristic of Plains mourning. They have in common fundamental social patternings of violent and uninhibited grief. This has nothing to do, of course, with the question of whether this is the emotion called up in all those who participate in the rites; the point at issue is only that in this region institutionalized behavior at this crisis is patterned upon free emotional indulgence.

In such a typical Apollonian culture as the pueblo of Isleta, on the other hand, Plains mourning is unthinkable. Isleta, like any other Apollonian society provides itself with rules by which to outlaw violence and aggressive moods of any kind. Strong feeling is repulsive to it and even at death, which is the most stubbornly unescapable of the tragic occasions of life, their whole emphasis is to provide a routine for getting by with the least possible upheaval. In Isleta a priest who is known as the Black Corn Mother and who is a functionary of one of the four "Corn" divisions of the Pueblo, officiates at death. He is called immediately and prepares the corpse, brushing the hair and washing and painting the face with identification marks to indicate the social affiliation of the dead. After this the relatives come in, bringing each a candle to the dead, and the Corn Mother prays and sends the people away again. When they have gone he and his helpers "feed" the dead man ceremonially with the left hand—associated with ghosts—and make an altar in the room. Only once again during all this ritual tending of the dead are the relatives admitted, and that is when the priest has ready a small smudge from the combings of the dead man's hair. The bereaved breathe this in and will thereby cease to grieve over the dead person. The burial takes place the following day, but the family and relatives are ceremonially taboo for four days and remain in retreat in the house of the dead man,

⁶ George Bird Grinnell, *The Cheyenne Indians*, 2. 162. Yale University Press, 1923.

⁷ Denig, *The Assiniboiné* BAE-R 46: 573.

receiving certain ritual washings from the priest. The formalites that more nearly correspond to burial in other regions are performed over the burial of food for the deceased on the fourth day. They go outside the village for this, and after it is over, they break the pot in which water was carried, and the hairbrush that was used to prepare the body for burial, and on their return cut their trail with a deep incision with a flint knife. They listen and hear the dead man come, far off, to the place where they buried food for him. The house is filled with people awaiting their return, and the Black Corn Mother preaches to them, telling them this is the last time they need be afraid of the dead man's returning. The four days has been as four years to him and therefore those who remain will be the readier to forget. The relatives go to their houses but the housemates observe the ordinary taboos for ceremonial purity for eight days more, after which everything is over. The Black Corn Mother goes to the cacique and returns to him the power he received from him and must always receive from him for every death, but which he has this means of disposing of when he is not compelled to exercise it. It is a characteristic Apollonian touch, and very common in the Southwest.⁸

There is here no frank institutionalized indulgence in grief, no cutting off of fingers—not even of hair—nor gashing of bodies, no destruction of property, not even a show of its distribution. Instead of insistence upon prolonged mourning by the most closely bereaved, the emphasis is all upon immediate forgetting. The two pictures are of course familiar types of contrasted behavior, and they are here institutionalized for two contrasted cultures.

In the face of the evident opposition of these two institutionalized types of behavior it is at first sight somewhat bizarre to group them together over against another type in contrast to which they are at one. It is true nevertheless. In their different contexts, the Southwest and the Plains are alike in not capitalizing ideas of pollution and dread. This is not to say that fear of contamination or of the dangerous power of the dead are never to be detected in these regions; they are humanly potential attitudes and no culture is perhaps hermetically sealed against them. But the culture does not capitalize them. In contrast with the non-Pueblo Southwest, for instance, these two are alike in realistically directing their behavior toward the loss-situation instead of romantically elaborating the danger situation. In Isleta the clan head officiating at death does not have to be purified and the curse of contact with the dead lifted from him when the rites are over; he lays aside his official prerogatives as undertaker as he would his stole. He has

⁸ Esther Schiff Goldfrank Isleta ms.

not been polluted by his office. Nor is the smudge for the relatives designed to put them beyond the pursuit of vengefulness of the dead, but rather to make them forget quickly.⁹ They break his hairbrush, not the bones of his legs, because what they are symbolizing is the ending of this man's life not precautions against his envy and vindictiveness. Similarly on the Plains¹⁰ the giving away of property and the demeaning of one's self in personal appearance, which is so commonly a ruse for forestalling the jealousy of the deceased, is here a gesture of grief and associated with such other manifestations of oblivion of one's self and ordinary routine as going off mourning alone on the prairies, or starting off "to kill or be killed, either being immaterial to him" in his grief. They do not destroy the tipi and all the man's horses, for they are neither concerned with the contamination of the corpse nor with the malice of the ghost toward those who continue to enjoy them. On the contrary their one thought is to give them away. Neither do they capitalize that common theme for patterning a danger situation, the fear and hatred of the person who has used supernatural power to kill the deceased.

These themes however are the very basis of the mourning ceremony in surrounding regions. It is no uncommon thing to find that death rites are hardly directed at all toward the loss-situation but wholly preoccupied with contamination. The Navaho are by no means extreme examples. The Franciscan Fathers¹¹ tell us that in former times slaves were employed to prepare and carry the corpse and they were killed at the grave. Now members of the family must expose themselves to this defilement. Men and women strip themselves to a breechcloth for the duty and leave the hair flowing so that not even a hair string may be exposed. To the Navaho either type of behavior we have just been describing would be unthinkable. Only those who because of their close kinship cannot avoid the duty accompany the body. Four are necessary, one to lead the favorite horse which is to be killed on the grave of his master, two to carry the corpse, and one to warn any travelers along the way that they may turn aside and save themselves from defilement. To protect themselves the mourners keep strict silence. Meantime the hogan in which death occurred has been burnt to the ground. All the members of the family fast for four days and during this time a guard warns all comers off the trail between the hogan and the grave lest they incur danger.¹²

⁹ In Zuñi however certain scalp dance attitudes are explicitly associated with the widow and widower. See p. 17.

¹⁰ In this entire discussion I exclude the Southern Sioux.

¹¹ An Ethnologic Dictionary of the Navajo Language, 454. St. Michael's, Arizona, 1910.

¹² Gladys A. Reichard, Social Life of the Navajo Indians. CU-CA 7: 142.

Besides the dominating fear of pollution, the Navaho have a strong fear also of the return of the ghost. If a woman fails in fasting or breaks silence, it will show the dead the way back and the ghost will harm the offender. This discomfort of the living before the dead is nearly universal, though it assumes very different proportions in different cultures.

On the other hand, the dreaded vengefulness of the ghost and his malice toward those who have been spared by death is not as popular in North America in the elaboration of the horror situation as it is in South America and in other parts of the world. It is a theme that for Crawley, for example, is fundamental in death practices, and it is striking that it should play so slight a role in North America. One of the clearest examples on this continent is from the Fox. The Central Algonkin have a strong belief in cruel antagonists which the dead must overcome along their route, and the custom of burying weapons with the body was in order that they might be armed against them. With the Winnebago, too,¹³ war hatchets were buried with the dead so that they might kill animals they met along their way, and their relatives in this world be blessed in like fashion. But Jones records that among the Fox it was a frequent request of the dying that they might be provided in the grave with a war hatchet to protect themselves against Cracker of Skulls, but this the living would not do because the dead were feared and it was desirable that they be weaponless. Therefore they are helpless before Cracker of Skulls who scoops from each a fingerful of brain.¹⁴

The Mohave on the other hand made much of the fear and blame of the medicine-man who had supernaturally caused the death. A seer was employed to visit the land of the dead after a death. If the deceased was not there, it was known that the doctor who attended him was guilty of malpractice. "It is the nature of these doctors to kill people in this way just as it is the nature of hawks to kill little birds for a living," according to a Mohave in the 80's. A rich man remained rich in the other world and all those a medicine-man killed were under his chieftainship. He desired a large rich band. "I've killed only two. When I die I want to rule a bigger band than that."¹⁵ When blame was attached to any medicine-man, anyone might take it upon himself to kill him.

The medicine-man openly avowed his complicity. He might hand a stick to a man and say, "I killed your father." Or he might come and tell a sick person, "Don't you know that it is I that am killing you? Must I grasp you

¹³ Paul Radin, *JAF* 22: 312.

¹⁴ Wm. Jones, *ICA* 15: 266.

¹⁵ John J. Bourke, *JAF* 2: 175, 1889.

and despatch you with my hands before you will try to kill me?"¹⁶ The point is that this is supernatural killing. There has never been any intimation that it was the custom for a medicine-man to use poison or knife. It is a blame- and terror-situation open and declared, a situation more familiar in Africa than in North America.

It is well to contrast this Mohave attitude with the Pueblo witchcraft theories. In Zuñi the bereavement situation is not lost in a situation of sorcery and of vengeance taken upon sorcery; bereavement is handled as bereavement, however clearly the emphasis is upon putting it by as soon as possible. In spite of the great amount of anxiety about witches which is always present among the Pueblo, at an actual death little attention is paid to the possibility of their complicity. Only in an epidemic when death becomes a public menace is the witch theory ordinarily acted upon. And it is a community anxiety neurosis, not a Dionysian situation depending like the Mohave on the exercise of the shaman's will to supernatural power, and the ambivalent attitude of the group toward this power. I doubt whether anyone in Zuñi has any witch techniques which he actually practices; no one defies another over a dead or dying man. It is never the medicine-man who by virtue of his medicine powers is also the death bringer and embodies in his one person the characteristic Dionysian double aspects of power. Death is not dramatized as a duel between a shaman, thought of as a bird of prey and his victim. Even the existence of all the necessary ideas among the Pueblo—it is interesting that they are overwhelmingly European in their detail—does not lead to this Dionysian interpretation of death.

There are other themes upon which danger situations can be and have been built up around death in different cultures. The point we need for our discussion is that the Dionysian indulgence in emotion at death can be institutionalized around realistic grief at the loss of a member of the community, or around various constructs such as contamination, guilt, and the vengefulness of the dead. The contrast between cultures which indulge in danger constructs of this sort in every situation in life and those that do not is as striking as that between the Apollonian-Dionysian types.

The fullest collections of primitive material on the danger situation are of course the various works of Crawley. This was his outstanding subject throughout his work, and he interpreted it as a universal drive in human society. It is certainly one that is common in institutional behavior, but it is for all its wide distribution a particular configuration of culture, and contrasting configurations develop their contrasting behaviors.

Where human contacts, the crises of life, and a wide range of acts are

¹⁶ A. L. Kroeber, *Handbook of the Indians of California*. BAE-B 78: 778.

regarded realistically in any culture, and especially without the metamorphosis that passes over them in consequence of the fear- and contamination-constructs we have been discussing, and this is institutionalized in culture, I shall call them realists. Cultures of the opposite type I shall call simply non-realists. It is admittedly poor terminology. James's antithesis of the tough and tender-minded approaches also the distinction I wish to make, but his substitute for these of healthy-mindedness and the sick soul brings in an implication I wish to avoid.

We must be content to say, I think, that those cultures that institutionalize death as loss, adolescence as an individual's growing up, mating as sex choice, killing as success in a fight, and so on, contrast strongly with those who live in an Aladdin's cave where all the vegetation is something else. It is certainly one of the most striking facts of anthropology that primary life situations are so seldom read off culturally in this direct and realistic fashion.

Indeed it is the realistic institutions that would seem to be the less thoroughly carried through. Human culture as a whole throughout its history has been based on certain non-realistic notions, of which animism and incest are the ones which will occur to every anthropologist. The fear of the ghost—not of his enmity or vengefulness, which is found only locally, but of his mere wraith—is another. These notions appear to have conditioned the human race from the beginning, and it is obviously impossible to go back to their beginnings or discuss the attitudes that gave them birth. For the purposes of this discussion we must accept them as we have to accept the fact that we have five fingers. Even the realistic Plains have not discarded them, though they use them more realistically than other cultures.

In the region we are discussing, the Dionysian cultures are cross-sectioned by this realist-nonrealist antithesis, the Plains institutionalizing excess and abandon without elaborating danger-situations, and the non-Pueblo Southwest, the Shoshoneans, and the Northwest Coast carrying these danger-situations to extremes. The realist cultures likewise are Dionysian among the Plains and Apollonian among the Pueblo. The two categories operate at a different level and cross-section each other. It is difficult, however, to imagine an Apollonian culture maintaining itself on the basis of fundamental danger-constructs, and certainly this type does not occur in the region we are considering.

It is impossible to do justice here to the consistency of this realist configuration among the western Plains; it would be necessary first to differentiate their institutional behavior from the Apollonian Pueblo and then from the romantics about them. So far as the people directly to the west,

the Shoshoneans, are concerned, the differences in behavior which I wish to stress have already been pointed out by Lowie.¹⁷ He notices the change in affect in menstrual taboos¹⁸ and the dropping out of the relevant customs. Childbirth and the menstruating woman have been two of the great points of departure for the tender-minded elaboration of horror and the uncanny. The Plains, like the Pueblo, do not share the trait. Lowie points out also how the Plains, again like the Pueblo, stand contrasted with the western groups in ignoring the non-realistic involvement of the husband in his wife's confinement. Attenuated forms of couvade are the rule for Shoshoneans, Plateau peoples, and Californians. It is not a Plains trait.

The same disinclination is evident in the contrasting attitude toward the name.¹⁹ Plains names are not mystic part and parcel of one's personality; they are realistic appellations much in our own sense. It is not a grievous insult to ask another's name. Even more, it is not an affair of life and death to use the name of another after his death. Among the Karok,²⁰ for instance, the same retribution must be visited upon this act as upon having taken the man's life. It is a fiction that is alien on the Plains.

There are therefore a considerable number of reasons for thinking that the cultural attitude we have noted in Plains mourning ceremonies over against those to the west and south (Navaho and Pima) are characteristic for their culture. Most striking of all perhaps, Lowie points out that among the western Plains vengeance upon the medicine man is atypical whereas it is reported among the Shoshoneans and the central Californians. I believe this can be put very much more strongly. In any other part of the world than North America we should frankly refer to the attitude that is constantly reported from British Columbia to the Pima as sorcery, and the killing of the shaman as vengeance taken on the sorcerer. The Plains simply do not make anything of this pattern. They use supernatural power to further their own exploits as warriors, they do not use it to build up threats. Sorcery is the prime institutionalization of the neurotic's fear world, and it does not find place from the Blackfoot to the Cheyenne.

Before we continue with further examples of mourning practices in other configurations, it will be clearer to illustrate the configurations we have just discussed by another situation—the situation of the man who has killed another. It throws into relief the attitudes we have been discussing.

¹⁷ The Cultural Connection of California and Plateau Shoshonean Tribes. UC-PAAE 20: 145–156.

¹⁸ *Ibid.*, 145.

¹⁹ Lowie, *ibid.*, 149.

²⁰ Stephen Powers, Tribes of California. CNAE 3: 33, 1877.

The Cheyenne scalp dance is characteristic of Plains configuration. Tremendous Dionysian exaltation is achieved, but not by way of horror or contamination ideas connected with the corpse; it is an uninhibited triumph, a gloating over the enemy who has been put out of the way. There is no intimation of a curse lying upon the scalper which it is the function of the dance to remove. There is no idea of the fearful potency of the scalp. It is a completely joyous occasion, a celebration of triumph and the answer to a prayer that had been made with tears.

Before setting out upon a warpath everything is solemn and prayerful, even sorrowful, in order to gain pity from the supernaturals.²¹ On the return with the scalps, however, all is changed. The party falls upon the home camp by surprise at daybreak, the favorite hour for Indian attack, their faces blackened in triumph

... shooting off their guns and waving the poles on which were the scalps that had been taken. The people were excited and welcomed them with shouts and yells. All was joy. The women sang songs of victory. . . . In the front rank were those who had . . . counted coups. . . . Some threw their arms around the successful warriors. Old men and women sang songs in which the names were mentioned. The relatives of those who rode in the first rank . . . testified to their joy by making gifts to friends or to poor people. The whole crowd might go to where some brave man lived or to where his father lived, and there dance in his honor. They were likely to prepare to dance all night, and perhaps to keep up this dancing for two days and two nights.²²

Grinnell speaks especially of the fact that there was no ceremonial recognition of the priest or of his services on their return. The scalp was an emblem of victory and something to rejoice over. If members of the war party had been killed the scalps were thrown away and there was no scalp dance. But if the warrior who had been killed had counted coup before he died there was no occasion for grief, so great was the honor, and the victory celebration over the scalp went forward.

Everyone joined in the scalp dance. In keeping with its social character it was in charge of berdaches who were here matchmakers and "good company" and who took the place of the female relative who usually has so conspicuous a role. They called out the dances and carried the scalps. Old men and women came out as clowns, and as if anything were wanting to emphasize the absence among the Cheyenne of dread and danger in relation to the slain enemy, Grinnell says that some of these were dressed to represent the very warriors whose scalps were the center of the ceremony.²³

²¹ Powers, *ibid.*, 22.

²² Grinnell, *op. cit.*, 6-22.

²³ *Ibid.*, 39-44.

This Plains behavior was unthinkable over a great part of the continent. In the southern belt of the United States, from the Natchez to the Mohave—excluding the Pueblo for the moment—the opposite attitude is at its height. Over this whole area the point of the scalp dance was the great dangerous supernatural potency of the scalp and the curse that must be removed from the slayer. It belonged to their whole tender-minded awe before dark and uncanny forces.

Years ago in the government warfare against the Apache the inexorable purification ceremonies of the Pima almost canceled their usefulness to the United States troops as allies. Their loyalty and bravery were undoubted, but upon the killing of an enemy each slayer must retire for twenty days of ceremonial purification. He selected a ceremonial father who cared for him and performed the rites. This father had himself taken life and been through the purification ceremonies. He sequestered the slayer in the bush in a small pit where he remained fasting for sixteen days, each four days with a plunge into the river, no matter what the weather, and a slight change in the rules of fasting. Among the Papago the father feeds him on the end of a long pole.²⁴ His wife must observe similar taboo in her own house. On the sixteenth day the dance occurs. The slayer sits again in a small pit in the middle of the dance circle, a hole that allows him only the most cramped position, and the "braves," men who have qualified as warriors, dance for him. The end of the Papago ceremony is the rite of throwing the slayer, bound hand and foot into the river, after which he is loosed from his bonds, physically and spiritually. A bit of the hair of the men he has killed is placed by his "father" in a buckskin bag along with an owl feather to insure its blindness and a hawk feather to kill it, and by the ceremony this medicine is made subservient to his will. He embraces it, calling it "child," and uses it thereafter to bring rain.²⁵ The whole ceremony is one for drawing the teeth of a dangerous power and freeing the perpetrator from curse, to the end that the power may be rendered beneficent.

The Mohave had a ceremony of which we have less detail. The master of ceremonies alone could touch the scalp during the four-day ceremonies and he had to incense himself eight times daily.²⁶

As I pointed out in a previous discussion of the Southwest, there is no culture trait in Zuni that presents so many unmodified likenesses to institutions outside the Pueblo as the scalp dance. From the point of view of

²⁴ D. D. Gaillard, *AA*, 6 s., 7 293-296, 1894.

²⁵ Russell, *The Pima Indians*. *BAL-R* 26 204; J. William Lloyd, *Aw-aw-tam Indian Nights*, 90. Westfield, New Jersey, 1911, and Benedict, ms.

²⁶ Kroeber, *Handbook*, 752.

Pueblo cultural attitudes it presents strikingly atypical elements which are well-known for the central region of North America and at home there. One such is the biting of the scalp, reported from Laguna²⁷ and Zuñi. This act is performed in the face of a strong feeling of contamination from the scalp. In Zuñi they say that the woman upon whom this act devolves is free of the curse because she rises to the point of "acting like an animal." It is an almost unique recognition in this culture of the state of ecstasy, and is an instance of a diffused culture trait, the scalp dance, which has been accepted among the Pueblo without the reconstruction that would have been necessary to bring it into line with their dominant attitudes.

Accepting this fact, we may examine the Zuñi scalp dance to see in what directions it has been modified at their hands. In the first place, they have rephrased the release from the curse so that it is no longer, as with the Pima and Papago, a dramatization of ambivalent attitudes toward the sacred—on the one hand, the polluting, on the other, the powerful—but belongs with any retreat undertaken to gain membership in a society. The scalp dance in Zuñi is an initiation into the policing society of the bow priesthood. It is taken up into their pattern of providing formal fraternal organizations for handling every situation. The bow priesthood is an elaborate organization with special responsibilities, functioning for life. The curse of the slayer and the release from it are dwarfed by the pattern of initiation into a new set of social functions.

Similarly the cleaning of the scalp, which in more Dionysian cultures is done with the tongue, lapping the fresh drops of blood, in Zuñi is an adoption rite, a baptism in clear water which is performed by the father's sisters to give status in the clan group. It must be performed not only at adoption but at marriage, and, as we have seen, in the scalp ceremony. The idea underlying the act in Zuñi is that of adoption of a new, beneficent influence into tribal status—surely a clear example of the way in which Pueblo configurations draw the teeth of more violent behaviors.

Their attitude is especially clear in the scalp dance prayers:

For indeed the enemy
 Even though on rubbish
 He lived and grew to maturity
 By virtue of the corn priests' rain prayers
 (He has become valuable.)
 Indeed the enemy
 Though in his life
 He was a person given to falsehood

²⁷ Franz Boas, *Keres Texts* AES-PS 290 (pt. 1).

He has become one to foretell
How the world will be,
How the days will be . . .
Even though he was without value,
Yet he was a water being,
He was a seed being,
Desiring the enemy's waters,
Desiring his seeds,
Desiring his wealth,
Eagerly you shall await his days (the scalp dance).
When with your clear water
You have bathed the enemy (the scalp).
When in the corn priests' water-filled court
He has been set up,
All the corn priest's children
With the song sequences of the fathers
Will be dancing for him.
And whenever all his days are past,
Then a good day,
A beautiful day,
A day filled with great shouting,
With great laughter,
A good day,
With us, your children,
You will pass.²⁸

It is not dread and horror that find expression in such lines as these. Instead the attention is realistically turned upon his unremarkable mortal existence, and the contrast is made with his present beneficence as a means toward rain and crops.

Both the bereavement situation and the murder situation show therefore strong contrasts in the three North American cultural configurations we have considered. I shall arbitrarily select one other contrasting configuration that is perhaps nowhere in the world more strikingly illustrated than in North America. The pursuit of personal aggrandizement on the Northwest Coast is carried out in such a way that it approaches an institutionalization of the megalomaniac personality type. The censorship which is insisted upon in civilizations like our own is absent in such self-glorifications as a Kwakiutl public address, and when censorship functions, as among the tribes of the gulf of Georgia, their self-abasements are patently not expressions of humility but equivalents of the familiar self-glorification of the Kwakiutl. Any of their songs illustrate the usual tenor:

²⁸ Ruth Bunzel, *Zuñi Ritual Poetry*. BAE-R 43 (in press).

I am the great chief who makes people ashamed.

I am the great chief who makes people ashamed.

Our chief brings shame to the faces.

Our chief brings jealousy to the faces.

Our chief makes people cover their faces by what he is continually doing in this world

Giving again and again oil feasts to all the tribes.²⁹

I began at the upper end of the tribes. Serves them right! Serves them right!

I came downstream setting fire to the tribes with my fire-bringer.

Serves them right! Serves them right!

My name, just my name, killed them, I, the great Mover of the world. Serves them right! Serves them right!³⁰

The energy of the culture is frankly given to competition in a game of raising one's personal status and of entrenching oneself by the humiliation of one's fellows. In a lesser degree this pursuit of personal prestige is characteristic of the Plains. But the picture is sharply contrasted. The Plains do not institutionalize the inferiority complex and its compensations. They do not preoccupy themselves with the discovery of insults in every situation. They are anything but paranoid. But it is in terms of these particular psychological sets that the pursuit of personal aggrandizement is carried out in the culture of the North Pacific coast. Probably the inferiority complex has never been so blatantly institutionalized. The greatest range of acts are regarded as insults, not only personal derogatory acts, but all untoward events like a cut from an axe or the overturning of a canoe. All such events threaten the ego security of the members of this paranoid-like civilization, and according to their pattern may be wiped out by the distribution of property. If they cannot be, the response is perfectly in character: the bubble of self-esteem is pricked and the man retires to his pallet for weeks at a time, or, it may be, takes his life. This extreme of negative self feeling is far removed from the exhibitions of shame due to indecent exposures or breaking of taboo in other regions. It is plain sulking, the behavior of a person whose self-esteem is all he has and who has been wounded in his pride.

All the circumstances of life are regarded on the Northwest Coast, not as occasions for violent grief or equally violent jubilation, occasions for freely expending energy in differentiated ways, but primarily as furthering, all of them alike, this insult contest. They are occasions for the required fight for prestige. Sex, the life cycle, death, warfare, are all almost equiva-

²⁹ Franz Boas. *Ethnology of the Kwakiutl*. BAE-R 35 1291.

³⁰ Boas, *op. cit.*, 1381.

lent raw material for cultural patterning to this end. A girl's adolescence is an event for which her father gathers property for ten years in order to demonstrate his greatness by a great distribution of wealth; it is not as a fact in the girl's sex life that it figures in their culture, but as a rung of her father's ladder toward higher social standing, therefore also of her own. For since in this region all property that is distributed must be paid back with usury (else the recipient will entirely lose face), to make oneself poor is the prime act in acquiring wealth. Even a quarrel with one's wife is something only a great man may indulge in, for it entails the distribution of all his property, even to the rafters of his house. But if the chief has enough wealth for this distribution of property, he welcomes the occasion as he does his daughter's puberty as a rung in the ladder of advancement.³¹

This comes out clearly in the reinterpretation of the bereavement situation in this region. Even the cutting of the hair in mourning has become not an act of grief on the part of near relatives, but the service of the opposite phratry signifying their tribute to the greatness of the deceased, and the fact that the relatives of the dead are able to recompense them. Similarly it also is another step upward in the pursuit of prestige and the acquisition of wealth. All the services for the dead are carried out in like manner. The emphasis of the society at death fell upon the distribution of property by the bereaved phratry to the officiating opposite phratry. Without reference to its character as a loss- or danger-situation, it was used just as the occasion of the girl's first menstruation or a domestic quarrel to demonstrate the solvency of the family group and to put down rival claimants to like wealth. Among the Haida³² the great funeral potlatch, a year after the death, where this property was distributed, was organized around the transfer of winter-dance society membership to members of the host's phratry from members of the guests' phratry, in return for the property that was being distributed to them—an activity of course that has reference to ideas of ownership and prestige and winter ceremonial among the Haida but not to the loss involved in death nor yet to the danger associated with the corpse or the ghost. As the Kwakiutl say "they fight with property"—i.e., to achieve and maintain status based on wealth and inherited prerogatives; therefore "they fight," also, with a funeral.

This reinterpretation of the bereavement situation in terms of the "fight with property" is, however, only a part of the Northwest Coast pattern of behavior. It is assimilated as well to the insult preoccupation. The death of a relative, not only in a war but by sickness or accident, was an affront

³¹ Boas, *op. cit.*, 1359.

³² John R. Swanton, *The Haida*, Jesup Expedition Report 5: 176, 179.

to be wiped out by the death of a person of another tribe. One was shamed until the score had been settled. The bereaved was dangerous in the way any man was who had been grievously shamed. When the chief Neqapenkem's sister and her daughter did not come back from Victoria either, people said, because their boat capsized or they drank bad whiskey, he called together the warriors. "Now I ask you tribes, who shall wail? Shall I do it or shall another?" The foremost responded, "Not you, Chief, let some other of the tribes." They set up the war pole, and the others came forward saying, "We came here to ask you to go to war that someone else may wail on account of our deceased sister." So they started out with full war rites to "pull under" the Sanetch for the chief's dead relatives. They found seven men and two children asleep and killed all except one girl whom they took captive.³³

Again, the chief Qaselas' son died, and he and his brother and uncle set out to wipe out the stain. They were entertained by Nengemalis at their first stop. After they had eaten, "Now I will tell you the news, Chief," Qaselas said. "My prince died today and you will go with him." So they killed their host and his wife. "Then Qaselas and his crew felt good when they arrived at Sebaa in the evening . . . It is not called war, but 'to die with those that are dead.'"³⁴

This is pure head hunting, a paranoid reading of bereavement that stands almost alone in North America. Here death is institutionalized in such practices as this as the major instance of the countless untoward events of life which confound a man's pride and are treated as insults.³⁵

Both the preoccupation with prestige and the preoccupation with insults underlie also the behavior centered around the killing of an enemy. The victory dance has become permanent, graded societies institutionalizing the most fiercely guarded prerogatives of these tribes; they constitute one of the most elaborate prestige organizations we know anything about. The original trait upon which they were built is preserved among the tribes to the south. It was a victory dance with the head of the enemy held in the teeth. As Professor Boas has shown, this became, as it was worked up into

³³ Boas, *op. cit.*, 1363.

³⁴ Boas, *op. cit.*, 1385.

³⁵ In this short survey I have emphasized the differentiated aspect of mourning on the Northwest Coast and omitted the strong institutionalization of death as uncleanness in this region, as this trait is common to regions we have discussed. No area has carried further the idea of uncleanness—mourners, menstruating women, women in childbirth, men and women after intercourse, are all unclean. This is institutionalized differently in different tribes as it comes into conflict with the prestige mechanisms.

the Northwest Coast configuration, the cannibal dance³⁶ and the pattern of the secret societies. The dancers of the Kwakwaka'wakw secret societies are still considered "warriors," and the societies, which are normally in operation only during the winter season, always function on a war party no matter what the season. Now these secret societies are the great validations of prestige and of wealth through the distribution of property, and the final Northwest Coast form of the germinal idea of the victory dance is therefore that of enormously elaborate, rigidly prescribed secret societies, membership in which establishes and validates social status.³⁷

The dominant drive being the competition for prerogatives, another turn is given to the situation of the person who has killed another. One can get prerogatives, according to their idea, not only through the death of relatives, but through that of a victim, so that if a person has been killed at my hands I may claim his prerogatives. The slayer's situation is therefore not one of circumventing a dread curse or of celebrating a triumph of personal prowess; it is one of distributing large amounts of wealth to validate the privileges he has taken by violence at the moment when, incidentally so far as institutional behavior goes, he took also the life of the owner. That is, the taking of life is dwarfed behind the immense edifice of behavior proper to the Northwest Coast configuration.

As in the bereavement situation, the pattern has led to the institutionalization of head hunting with all its rigid rules of procedure. Meled had killed the chief of the local group Gexsem.

If he (Meled) had paid a copper or if he had given his daughter to marry the elder brother of the one he had shot, then his local group would have been disgraced, because he paid in order not to be killed in return. Only those pay who are weak minded.

He did not pay, and he was killed in revenge. But the man who killed him on sight was not a member of the local group of the chief whose death he was avenging. That chief's mother paid the avenger a slave but it was a disgrace to her local group and in spite of Meled's death it was not counted that the stain upon the name of the dead chief's local group had been wiped out.

³⁶ 12th and Final Report on the North-Western Tribes. British Association for the Advancement of Science, 51, 1898.

³⁷ It is obvious from the nature of the case that this Northwest Coast game of prestige can only be played by selected members of the community. A large proportion of the tribe is no more than audience to these principal players, and the configuration of life for them necessarily differs. We need particularly to understand these "fan" cultures and the psychological attitudes characteristic on the one hand of the actors and on the other of those who make up the audience.

If another man of the local group Gexsem had killed Meled, then there would have been no disgrace to their group and all the men would have stopped talking about it.³⁵

Death on the North Pacific Coast, therefore, was primarily an insult situation and an occasion for the validation of prerogatives. It is taken up into the characteristic configuration of this region and made to serve the drives that were dominant in their culture.

There are of course aspects of culture, especially of material culture, which are independent of many of the aims and virtues a society may make for itself. I do not mean to imply that the fortunes of the sinew-backed bow will depend upon whether the culture is Dionysian or Apollonian. But the range of applicability of the point I am making is nevertheless greater than is generally supposed. Radin has for instance argued very cogently from Winnebago material for the great importance of individuality and individual initiative "among primitives."³⁹ Now the Plains and the Winnebago are among our great primitive examples, according to all observers, of high cultural evaluation of the individual. He is allowed institutionally guaranteed initiative in his life such as one cannot easily duplicate from other regions. One has only to compare it with the Pueblo to realize that Radin's point of very great personal initiative is a prime fact among the Winnebago and the western Plains, but not coextensive with primitive culture. It is an attitude to be studied independently in each area.

The same is also true of Malinowski's picture of the way in which the Trobrianders—and Melanesia generally, we may well add—have made reciprocity a basic behavior trait of their culture. He describes the reciprocal obligations of sea and land peoples, of chief and subjects, of the two sides of the house, of husband and wife and other selected reciprocating relatives, and he deduces from this that "tradition" is a weak word invoked by the anthropologist to cover our ignorance of what really holds "society" together, a function that is performed by reciprocity. But this organization of society here is of a definite type, highly uncharacteristic, say, of Siberia, and fundamental in any description of Melanesia. In what way it ties up with fundamental attitudes in that region is still to be defined.

Cultural configurations stand to the understanding of group behavior in the relation that personality types stand to the understanding of individual behavior. In the psychological field, behavior is no longer given the same

³⁸ Boas, *op. cit.*, 1360.

³⁹ Primitive Man as Philosopher, 32 ff.

interpretation, say, for the cycloid and the schizoid type. It is recognized that the organization of the total personality is crucial in the understanding or even in the mere description of individual behavior.⁴⁰ If this is true in individual psychology where individual differentiation must be limited always by the cultural forms and by the short span of a human lifetime, it is even more imperative in social psychology where the limitations of time and of conformity are transcended. The degree of integration that may be attained is of course incomparably greater than can ever be found in individual psychology. Cultures from this point of view are individual psychology thrown large upon the screen, given gigantic proportions and a long time span.

This is a reading of cultural from individual psychology, but it is not open to the objections that always have to be pressed against such versions as Frazer's or Lévy-Bruhl's.⁴¹ The difficulty with the reading of husband's prerogatives from jealousy, and secret societies from the exclusiveness of age- and sex-groups, is that it ignores the crucial point, which is not the occurrence of the trait but the social choice that elected its institutionalization in that culture. The formula is always helpless before the opposite situation. In the reading of cultural configurations as I have presented it in this discussion, it is this selective choice of the society which is the crux of the process. It is probable that there is potentially about the same range of individual temperaments and gifts, but from the point of view of the individual on the threshold of that society, each culture has already chosen certain of these traits to make its own and certain to ignore. The central fact is that the history of each trait is understandable exactly in terms of its having passed through this needle's eye of social acceptance.

This involves another aspect of the problem of cultural configurations, that which concerns the adjustment of the individual to his society. As we have said, it is probable that about the same range of individual temperaments are found in any group. But the group has already made its cultural choice of those human endowments and peculiarities it will put to use. Out of small leanings in one direction or another it has bent itself so far toward some point of the compass that no manipulation can change its direction. Most of the persons born into the culture will take its bent and very likely incline it further. Those are most fortunate whose native dispositions are in accord with the culture they happen to be born into--those of realistic tendencies who are born among the western Plains, those who are liable to delusions of reference who are born on the Northwest Coast, the Apollon-

⁴⁰ William Stern, *Die menschliche Persönlichkeit*, Johann Ambrosius Barth, Leipzig, 1910.

⁴¹ See Clark Wissler, *Science*, 63, 193-201, 1916.

ians who are born among the Pueblo, the Dionysians who are born among the American Indians outside the Pueblo. In the particular situation we have been discussing, the person to whom violent indulgence in grief is congenial is well provided for culturally among the Cheyenne, the one who dreads violent expression and wishes to get the painful situation over with with a minimum of expression, in Isleta. The person who easily feels personal reference in any situation of life, even in death, finds his paranoid tendencies well channeled among the Kwakiutl.

Contrariwise, the misfit is the person whose disposition is not capitalized by his culture. The Dionysian who is born among the Pueblo must re-educate himself or go for nothing in the culture. The Apollonian, likewise, in California is shut out of social activity in so far as he cannot learn to take to himself the institutionalized behavior of the locality. The person who does not readily read insults into external events can only function with extreme difficulty on the north Pacific Coast or in northwestern California.

It is clear that there is not possible any generalized description of "the" deviant—he is the representative of that arc of human capacities that is not capitalized in his culture. In proportion as his civilization has committed itself to a direction alien to him, he will be the sufferer. The intelligent understanding of the relation of the individual to his society, therefore, involves always the understanding of the types of human motivations and capacities capitalized in his society and the congruity or incongruity of these with those that are native to the individual under discussion or are the result of early familial conditioning. It can always be unquestioningly assumed that by far the majority of any population will be thoroughly assimilated to the standards of their culture—they will learn to read life in terms of violence, or of sobriety, or of insults as the case may be. But the person who is at a loss in his society, the unavailable person, is not some one type to be specified and described on the basis of a universally valid abnormal psychology, but he represents the type not capitalized in the society to which he was born.

All this has a most important bearing on the formation and functioning of culture traits. We are too much in the habit of studying religion, let us say, or property complexes, as if the fundamental fact about them were a dependable human response: like awe, for example, or the "acquisitive instinct," from which they stemmed. Now there have been human institutions that do show this direct correspondence to simple human emotions—death practices that express grief, mating customs that express sex preference, agricultural practices that begin and end with the provisioning of the tribe. But even to list them in this fashion makes forcibly clear how difficult

it is to find such examples. As a matter of fact, agriculture and economic life in general usually sets itself other ends than the satisfaction of the food quest, marriage usually expresses other things more strikingly than sex preference, and mourning notoriously does not stress grief. The more intimately we know the inner workings of different cultures the more readily we can see that the almost infinite variability in any cultural trait if it is followed around the globe is not a mere ringing of the changes upon some simple underlying human response. Another and greater force has been at work that has used the recurring situations of mating, death, provisioning, and the rest almost as raw material and elaborated them to express its own intent. This force that bends occasions to its purposes and fashions them to its own idiom we can call within that society its dominant drive. Some societies have brought all this raw material into conspicuous harmony with this dominant drive, the societies to which on an a priori basis Sapir would allow the appellation of "genuine cultures."¹² Many have not. Sapir holds that an honest self-consistency that rules out hypocritical pretensions is the mark of a genuine culture. It seems to me that cultures may be built solidly and harmoniously upon fantasies, fear-constructs, or inferiority complexes and indulge to the limit in hypocrisy and pretensions. The person who has an ineradicable drive to face the facts and avoid hypocrisy may be the outlaw of a culture that is nevertheless on its own basis symmetrical and harmonious. Because a configuration is well-defined it is not therefore honest.

It is, however, the reality of such configurations that is in question. I do not see that the development of these configurations in different societies is more mystic or difficult to understand than, for example, the development of an art style. In both if we have the available material we can see the gradual integration of elements, and growing dominance of some few stylistic drives. In both, also if we had the material, we could without doubt trace the influence of gifted individuals who have bent the culture in the direction of their own capacities. But the configuration of the culture nevertheless always transcends the individual elements that have gone to its making. The cultural configuration builds itself up over generations, discarding, as no individual may, the traits that are uncongenial to it. It takes to itself ritual and artistic and activational modes of expression that solidify its attitude and make it explicit. Many cultures have never achieved this thoroughgoing harmony. There are peoples who seem to shift back and forth between different types of behavior. Like our own civilization they

¹² E. Sapir, *Culture, Genuine and Spurious*. *American Journal Soc.* 29: 401-417, 1924.

may have received too many contradictory influences from different outside sources and been unable to reduce them to a common denominator. But the fact that certain people have not done so, no more makes it unnecessary to study culture from this angle than the fact that some languages shift back and forth between different fundamental grammatical devices in forming the plural or in designating tense, makes it unnecessary to study grammatical forms.

These dominant drives are as characteristic for individual areas as are house forms or the regulations of inheritance. We are too handicapped yet by lack of relevant descriptions of culture to know whether these drive-distributions are often coextensive with distribution of material culture, or whether in some regions there are many such to one culture area defined from more objective traits. Descriptions of culture from this point of view must include much that older fieldwork ignored, and without the relevant fieldwork all our propositions are pure romancing.

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ABORIGINAL SURVIVALS IN MAYO CULTURE

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THE Mayo of southern Sonora offer a fairly typical problem in a Mexican folk-culture which, although presenting an integrated whole, is made up of heterogeneous elements drawn from Spanish-Mexican and Indian sources. In Robert Redfield's Tepoztlan¹ were presented recently the results of a study concerned with the contemporary functioning of such a Mexican folk-culture. I present a brief outline of some of the problems involved in a study of a culture of similar status in which the emphasis was placed on the more traditional anthropological interests.² It is perhaps regrettable that there has been no study made comparable to Redfield's to divert some public attention from the over-popularized and romanticized Tepoztlan.³

Many elements of the generalized sub-stratum of Mexican Indian cultures (e.g., the metate, tortilla, and much of the maize complex) have been incorporated into the contemporary Mexican "white" culture, particularly among the large lower class, just as Spanish-Mexican elements have been incorporated in the surviving Indian cultures. The 300 to 400 years of this interchange has led to a convergence of the two cultures, to some extent reducing them to a common level and wiping out the more obvious differences. This is the case, not only with the Mayo, but throughout Mexico, and it is apparent, not only to the outside observer, but to the Indian himself. The Mayo feels strongly a psychical difference between himself and his Mexican neighbors and holds himself as aloof as possible from them, but it is virtually impossible for a Mayo to name a specific cultural difference between the two groups. He is Catholic, so are his white neighbors. That is the important thing, not the fact that his catholicism is an entirely

¹ Robert Redfield, *Tepoztlan, A Mexican Village*. Chicago, 1930.

² Nearly five months were spent in 1930-31 among the Mayo, while the very similar Yaqui were studied briefly. I hope to make a more intensive study of the latter. It is likely that what is said here will apply in large part to the Yaqui as well. The work was done as a fellow of the National Research Council and the field expenses were borne in part by the University of California.

³ Redfield falls into the error of romanticizing the Tepoztlan Indian rather unconsciously when he is dealing with the rhythms of life in the community. However, he is not so much at fault as Carleton Beals in his chapter on Tepoztlan in his *Mexican Maze*, or in his articles on Mexican Folkways. Stuart Chase (*Mexico: A Study of Two Americas*) is the worst offender, first in assuming that Tepoztlan is a typical Mexican village, and secondly in adopting a ridiculously Rousseauian attitude. This type of romantic emotionalism seems out of place after the objectivity of modern ethnological studies has shown the Indian to be about as controlled by his culture as are we.

different brand to which the label may be attached only by courtesy. Aside from his religion he is even less conscious of any differentiating factors. To some extent this is due to his failing to make an analytical comparison, for the differences are readily definable, at least in part.

In a larger sense the Indian is probably justified in his viewpoint. There is no important part of Mayo culture which in its major aspects is not shared with the Mexican, if indeed it is not more Mexican than Indian. Nevertheless, the number of aboriginal survivals is not small, though one must deal with details or with traits which have been so completely absorbed in the local Mexican culture that they cease to be Indian.

The nature of these survivals is of more than historical interest. The problem, in view of the general Mexicanization of the culture, is to ascertain why these particular traits have survived, in other words, to discover the forces and circumstances of which the present compositive culture is a product.

It is not possible at this stage of the study to completely list the survivals still to be found in Mayo culture, but a considerable number of traits may be so designated. For some the historical descriptions of the people give conclusive evidence, but others are yielded only by analysis.

For example, most of the house types may be checked against early sources on the Mayo, for the descriptions are adequate and to some extent give negative evidence. Thus it is certain that the modern adobe houses are not a survival but that the use of mats for walls is. For other things the evidence is equally clear but of another order. The use of the slab type of metate differentiates Mayo from Mexican, and its early use is amply attested by archaeological and distributional evidence.

The mere fact that an element differentiates Indian from Mexican is not inherent proof of its aboriginal character. Virtually as common as the slab metate is the wooden cross before the Indian house, but this trait is assuredly not of Indian origin. On the other hand, the use of reed matting for house walls, although historically attested to be an aboriginal trait, has almost completely ceased to differentiate the two cultures, at least locally, and the same is true to some extent of the carrying yoke.

Without further evidence, which will be presented in a subsequent paper, the aboriginal survivals are listed below. In a second list some Mexican traits are given to suggest the relative importance of the two components in the present culture. In the third column are listed a few traits which one might have expected would be adopted by the Indian but which actually play a very small part in the present culture. Traits of aboriginal culture which are also fairly common in the local Mexican culture are

marked with an X. The lists are tentative and incomplete, but they may prove of some value until a more adequate paper is prepared. One point in particular should be noted. The first list includes only traits in existence today. If it included traits which have disappeared within the memory of men now living it would be considerably longer.

SURVIVALS IN MAYO CULTURE AND SOME MEXICAN CONTRIBUTIONS
(x indicates trait common to local Mexican population.)

<i>Survivals</i>	<i>Mexican traits common among Mayo</i>	<i>Mexican traits little used by the Mayo</i>
<i>Houses, House Furnishings, House Utilization</i>		
Mud roofs x	Adobe walls	Whitewashing walls
Thatched roofs (in hills)		
Walls of matting x		
Wattle walls x		
Mud-wattle walls x		
Ramada x		
Separate kitchen x		
Sleeping outdoors under ramada		
Clay fireplace on ground	Brick or adobe fireplace on raised platform	
Slab metate		3-legged metate
Wooden bowls		
Gourd dippers		
Gourd water bottles		
Beds of cane x ⁴		
Mats of split canes x ⁵		Metal household utensils ⁶
Mats of palm leaf x ⁵		
Large wooden spoons x ⁴		
Pottery vessels		Mexicans use differ- ent pottery types
Fences of interwoven canes about yards ⁷		
<i>Animals</i>		
Dog x	Horses	
	Mules	

⁴ Little used by Mexicans.

⁵ Used but not made by Mexicans.

⁶ Use only metal coffee pot, teaspoons, knives.

⁷ Much more frequent among Yaqui.

Burros
Cattle
Sheep
Goats
Fowl
Cats

Pigs⁸
Turkey

Cultivated Plants

Maize x
Beans x
Squashes and gourds x
Native tobacco

Garbanzos (chick-peas)
Wheat

Chile
Tomato
Onion
Garlic
Potatoes and other
vegetables

Foods

Tortillas x
Tamales x
Beans x
Squashes x
Various types of greens
Game when available,
mostly deer and peccary x
Stews of meat, beans, corn
Atole x
Mesquite⁹
Pitahaya x⁴
Tuna x⁴
Roasted agave stalks x⁵

Some beef and goat meat
Rarely mutton
Wheat tortillas and bread
Garbanzos
Coffee
Sugar

Chile, onion, tomato,
garlic; other vege-
tables only to
small degree
Eggs
Cheese
Milk products
Chocolate⁷

Tools, Weapons, Etc.

Bow
Foreshafted, three-feathered
arrows
Foreshafted cane pig spears
Coa (hoe of specialized form)
?x
Wooden flail, fork, shovel for
threshing?
Carrying yoke x⁴

Firearms

Plow
Shovel
Hoe
Fork
Horse, mule, burro equip-
ment
Dairying equipment

⁸ Never eaten, raised for sale.

⁹ Used only in emergencies.

Handicrafts

Methods of making and types of pottery		
Loom for belts and blankets		
Heddle?		
Method of weaving	Wool replacing cotton	
Indigo and other vegetable dyes		
Carding bow		
Urine fixing		
Baskets of cane, willow, palm- leaf, but probably not all shapes	Furniture making	
Maguey fiber bags	Carpentry	Blacksmithing
Cord and rope making?	Mechanical work, trac-	Leather work
Maguey fiber belts and straps?	tors, farm machinery, etc.	
	Saddle making	
	Making of saddle bags and blankets	
	Jewelry manufacture?	

Musical Instruments

Flageolet or flute	Violin ¹⁰
Double headed drum	Harp ¹⁰
Gourd drum in water	
Notched rasping sticks	
Gourd rattles	
Cocoon rattles	
Deer hoof rattles	
Musical bow	

Religious Ideas and Ceremonies

Concept of reincarnation	Otherwise completely	
Religious feasts	Catholic in ideas of cre-	
Drinking associated with re-	ation, universe, God,	
ligious occasions	life after death	
Animal impersonating dances	Saints and images	Priest rarely visited
Masks	Baptism	
Clowning in ceremonies	Confirmation	
Herb doctors and shamans	Religious processions,	
Killing of "witches"	prayers, etc.	

¹⁰ Of native manufacture.

Passion play
Major portion of ceremonial organization

Clothing

Breechclout ¹¹	Shirt ¹²	Belts
Guaraches (sandals) x	Trousers	Coats ¹³
Native woven blankets	Shoes	
Native woven sashes	Hats	

Social Characteristics

Reputed homosexuality	Mexican kinship terms
	Civil marriage

Political Institutions

Chief—now a religious functionary	Complete mexicanization in current political institutions
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Before discussing the survivals it is necessary to give an outline of Mayo history. The Mayo have been in contact with white peoples for four centuries. They were probably visited first by a portion of the Guzmán expedition. Cabeza de Vaca and Ibarra may have crossed their territory; Coronado must have passed through the heart of the country. There were only sporadic contacts with missionaries and soldiers established in the southern part of Cahita territory until the establishment of missions among the Mayo in 1613. Until the expulsion of the Jesuits in 1767, the Mayo were under mission control, although apparently toward the end of this period the influence of the missionaries declined materially. After the abandonment of the missions the Indians became virtually independent. Most of the white population lived in the mining centers in the hills, and the Indians lived largely in their own towns, particularly in the coastal regions. Buyers of hides occasionally visited the Indians, and the Indians infrequently made trips to white towns for trade or for marriages and baptisms. This was about the extent of Indian and white contacts until the latter part of the nineteenth century, but with the Díaz régime the period of semi-independence came to an end. White farmers took up lands, in many cases

¹¹ At present worn only by boys.
¹² Shirt tail generally worn outside trousers by Indians.
¹³ Coats also rare among lower class Mexicans.

the Indians being dispossessed, large haciendas employing Indian labor were established, and Mexicans settled in the Indian towns. The Indians lost a large part of their political autonomy and their economic independence, thus laying the grounds for the Yaqui wars of the last half century. A new period of cultural change set in for the Mayo which is still continuing. The speed of this change may be judged by the fact that a decade ago it was common to see adults naked but for the breechcloth in outlying villages; now in these same villages a naked child is apologized for.

On first acquaintance the Mayo presents little difference from the Mexican. His clothing and the outward aspects of his houses and fields are quite similar. In character, however, the Mexican is generally friendly, talkative, hospitable, often helpful to the point of being a nuisance. The Mayo is suspicious, shy, often rudely uncommunicative. He frequently denies knowledge of Spanish although at least 80 percent or more speak the language fluently. He is courteous on closer acquaintance but not hospitable in the sense that Mexicans are, the Indian will never offer a white guest food. The disagreeable traits of the Indian seem emphasized the closer one is to the Mexican towns.

One may now consider the question of why these particular traits have survived through four hundred years while others have disappeared. The psychological factors must necessarily remain obscure to a considerable extent, particularly as they concern not only Indian but white psychology. But it is certain that a number of processes are involved which are far from conventional psychology and depend to a large extent on historical accidents. One thing which should be borne in mind is that for a considerable period the contacts with white culture were slight and the native culture as nearly static as cultures ever are.

Certain aspects of life are almost lacking from the list of aboriginal survivals, notably political organization and social institutions. It is doubtful if many survivals exist in these fields. The reasons for this obliteration are largely historical. The missionary government undoubtedly tampered with native political ideas to some extent. The missionaries, though, were interested only in securing cooperation and order. Consequently they left the nominally elective chiefs; moreover they invested the chief with new powers. He became the moral and financial mentor of the village, powers which apparently became emphasized after the withdrawal of the missionaries. He was the banker, salesman, purchasing agent, and custodian of morals. In this guise he existed until well within the memory of Indians now living. But when the Indian was forced to accept the residence of Mexicans among his ranches and villages, the situation changed. The chief was

quickly shorn of all his political authority and only lingers on as an official who sees that the religious ceremonies are properly performed.

The political changes were, then, largely enforced as a matter of expediency by the Mexicans. It was a case of submit or fight. The Yaqui fought and their chiefs still have a limited but recognized political influence.

In the field of social relationships much the same history may be traced although the causes are not identical. The missionaries succeeded in stamping out polygamy and the sororate. But Mayo ideas of marriage otherwise were to their liking. There was a strong emphasis on pre-marital chastity. Marriages were probably arranged by the parents; at least the consent of the girl's parents was necessary for a marriage to be socially acceptable. These features were probably supported and emphasized by the missionaries; certainly they continued to exist until fairly recent times. But with the village groups of kinsmen dislocated by the changes under Díaz, the earlier village exogamy became increasingly futile through the dispersal of families; the younger people learned of new moral codes introduced by the surrounding Mexicans; the priest became entirely unsympathetic and civil marriage replaced religious. Marriage, as a result, cannot be distinguished today from that of the lower class Mexicans', except that possibly it is more commonly legalized. The causes of change here are again external though not identical with those in the field of political institutions.

In religion the influence of the missionaries was undoubtedly positive, yet here we find relatively less change than in the other two categories. Inwardly the situation has changed considerably. The ideology of Indian religion has disappeared to a surprising degree, being replaced by Catholic beliefs, while the external trappings retain to a considerable extent the details, perhaps modified, of Indian ceremonialism. The cultural background and the mental sets which contributed to the willing acceptance of Christianity by the Yaqui and Mayo may perhaps never be known, but it is surprising to what extent the contemporary catholicism has been altered. The historical course of this remodeling, which has assumed such uniform expression among both the Yaqui and Mayo, would be very interesting to know. It is only on the subject of religion that the Mayo is ever conscious of the differences with the Mexican culture. The Mayo are Catholics, that they claim firmly, but they often know that they wear their catholicism with a difference. Even so their theology is purely Catholic with the exception of their idea of reincarnation.

A complete understanding of the present form of Mayo religion or even of its place in the life of the population can only come from extended historical research. Knowing, however, the missionary tendency to adapt

what was possible of native ceremonials to Catholic purposes, one may surmise that the missionaries would have made little alteration in the form of the religious gathering, they were interested primarily in its occasion. The feasting and dancing of the aboriginal gathering could easily have been adapted to Catholic festivals and these events retain a great deal of the primitive both in flavor and in detail.

The number of missionaries at any one time among the Mayo was small. Their dominant interest lay in the spiritual welfare of their charges in so far as it did not lie in the upbuilding of the material welfare of the missions. In the spiritual life of the Indian they appear to have wrought the greatest change. Their interest in political life was purely to secure peace and cooperation. The real blow at political life came later.

What the Indians retained, then, of their original customs in these fields seems largely to have been what the missionary and the Mexican political authorities did not think worth changing. Why the Mayo was so easily changed is another question. Perhaps the answer might lie in his peaceable character but this would not explain the very similar changes wrought in the culture of the war-like Yaqui and Tehueco. In the religious field perhaps the color of catholicism was the deciding factor.

There is another point which may make the acceptance of change easier to understand. In spite of his apparent conservatism, not only the Mayo but the Yaqui has a real appreciation of what is new if it has an obvious advantage over his own way of doing things, or if the thing in question lies entirely outside his customary pursuits. Some examples may illustrate the point.

Efforts have been made to persuade the Mayo to alter the shape of the hats, which they manufacture for sale locally, with the object of marketing them outside the district. These have been unsuccessful, apparently for the reason that it is impossible to convince the Indians of the advantage to be gained from the change. Machinery is another question. The Mayo has taken over the sewing machine; no doubt he would take over a machine which would facilitate the manufacture of hats. The advantage in this case would be obvious. The steel plow also has been adopted generally. The Mayo learns the operation and repair of tractors and other types of farm machinery rather readily. But unless he can be convinced of a real advantage to be derived from altering his way of living, the Mayo clings to his own mode of life.

This attitude, no doubt, accounts for most of the aboriginal survivals in material things. The use of adobe is practical only where danger of flooding is slight. The Mayo builds of adobe on the higher ground; on the river

bottoms he generally retains his old type of house where the Mexican would chance adobe. The slab metate can be made, and it can be mounted in the crotch of a tree trunk stuck in the ground, whereas the legged type requires a table; wooden bowls can be made in one's spare time, gourd dip-pers are durable and cheap. Of foods brought by the Spanish, the Mayo has adopted chile peppers, wheat, garbanzos (chick-peas), tomatoes, coffee, sugar, and cheese. Of these he used primarily only garbanzos and wheat as material additions to his diet. These are fitted definitely into the old food patterns. With the exception of coffee and to some extent beef and goat meat, the other introduced foods of the Spaniards hold very little place in Indian cookery.

The Mayo is, then, primarily an empiricist. What works is good; what works better so far as his experience goes, he will accept. His conservatism extends only to those things whose advantages are not obvious. Unconscious but consistent opportunism accounts for the melange which makes up the material culture of the Mayo. Speaking of the culture as a whole one might say that it is composed of aboriginal elements for which the Mayo has found no substitute to his liking, of substitutes for aboriginal elements, and a group of traits forced upon him first by the missionaries and later by the political authority of the Mexican. Only in clothing and to some extent in social customs has the Mayo voluntarily changed to conform to Mexican standards—and then for the worse. These latter changes seem due to a fairly recently awakened self-consciousness. The Mayo objects most to exploitation, and then to ridicule.

This picture of the forces shaping contemporary Mayo culture is unquestionably too simple. For many elements of culture, particularly in social organization and religion, it is difficult to adopt a qualitative criterion. The reason for a complete change in social organization and only a partial change in religious ceremonial are obscure. In these fields above all others one would expect mental sets and cultural patterns to militate against change. Or if change occurred one might expect it to take place equally within the two categories.

One enters here upon speculative ground, but it is nevertheless interesting territory. The period of greatest change in Mayo society is very definitely recent. Is it not possible that the breakdown in Mayo society which is closely allied with the adoption of lower class Mexican moral attitudes may be a reaction against a period of puritanism extending back into aboriginal times? There is no reason for assuming that such movements do not play as much a part in primitive societies as in our own.

Again, the long standing assumption of the Mexicans that they are

gente de razon, the reasoning people, as contrasted with the Mayo, may have had the effect of making the Indian view his own mode of life with more critical eye. The Indian certainly resents being laughed at by the Mexican; it never occurs to him to laugh at the Mexican. This would also be reinforced by the breaking up of the conservative factors inherent in the kinship units about which Mayo society formerly revolved. Thus we have the same difference between Tontos and Correctos, though these terms are not used, as reported by Redfield for Tepoztlan, with the balance of favor in the social attitudes leaning toward the Correctos. The difference between Tontos and Correctos, incidentally, accompanies a definite racial cleavage in Sonora.

But why should not these forces have affected religion as deeply? Other factors must be involved. The breakdown of purely native religion evidently occurred in mission times. The missionaries gave the Indian a definite religious form, hybrid in nature, to replace the native religion, a form with white sanctions. Consequently, the Indian's inner defenses are well in order and contemporary white amusement at his practices may be to some extent ignored. Moreover, the religious activities of the Mayo have run into a blind alley away from the Catholic church; they cannot go back to the church fully so long as the church will not seek them out.

The acculturation which has occurred is thus seen to be explainable largely in historical terms. Process is involved but, generally speaking, it has significance only in the historical context. The voluntary acculturation has been confined largely to material things. In this field the processes involved were, no doubt, similar to those at work when cultural changes occur among ourselves, namely, the perception of relative advantages, limited by breadth of outlook and innate conservatism, and reinforced by chance cultural sets—and of course, unconfused by salesmanship and advertising. In the field of non-material changes, some alterations were forced, the methods varying according to the temperament of administrators and the practical exigencies of the various situations. Certain cultural changes depended on the alteration of other phases of culture. Thus, the change to Mexican kinship terms would depend on the destruction of the social organization which gave some functional value to the old system, together with the development of social institutions of Spanish type, which gave the new kinship terms significance.

Whatever merit these speculations may have, they seem to demonstrate that it is impossible to make any generalization which will account for the whole of contemporary Mayo culture. An analysis of the cultural processes involved leads in different directions for different categories of

culture. Very likely, were it possible to analyze in more detail, it would be found difficult to formulate a generalization which would hold within a single category. Each trait or cluster of traits might be found to have followed different courses. And finally, our understanding of the events by which Mayo culture is being changed today is vastly increased by the historical knowledge of its previous course.

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THE PROBLEM OF THE SWEET POTATO IN POLYNESIA

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IF WE accept the present conclusions of the botanists that the sweet potato is a plant of undoubted Central or South American origin, then the fact of its widespread occurrence in Polynesia in the eighteenth century, as reported by the great explorers of the period, can be explained only in one of three ways. Either the plant had been introduced by the Spanish from South America in the sixteenth and seventeenth centuries when the earliest European discoveries in the Pacific were being made, or it was of pre-Columbian introduction accomplished either by Polynesians who visited South America and brought the new food plant back with them, or by Peruvian or other American Indian navigators who carried it with them in exploring voyages to the west.

The theory of a Spanish introduction was put forward nearly a hundred years ago, and has had various modern adherents, notably Friederici¹ in Germany and Laufer² in this country. It is with this theory of a Spanish origin that I propose to deal in this paper. If this explanation of the presence of the sweet potato in Polynesia is correct, it follows that the fact can no longer be pointed to as evidence of trans-Pacific cultural diffusion. If, on the other hand, such an explanation can be shown to be not only improbable but apparently impossible, then the problem of pre-Columbian contacts between Polynesia and South America takes on a greater significance.

Friederici has stated most clearly and in greatest detail the arguments in favor of a Spanish introduction. These may be summarized briefly as follows. Mendaña and Quiros, the Spanish explorers of the end of the sixteenth and the beginning of the seventeenth centuries who discovered the Marquesas group in Polynesia and the Santa Cruz, Solomon, and New Hebrides groups in eastern Melanesia, do not mention the existence of the sweet potato in these islands. We may therefore assume that at that time it was unknown in the Pacific. As they sailed from Peru where the sweet potato was an old and important food product, they may be presumed to have carried supplies of it with them for their use. Since, further, the Spanish always made it a point to plant seeds of all kinds in the prosecution of their discoveries in order to introduce familiar foods into the new lands, we may also assume, even though it is not specifically mentioned, that they planted the sweet potato in all these islands. From these points then, the Marquesas in Polynesia and Santa Cruz, the Solomons and New

¹ Friederici.

² Laufer.

Hebrides in eastern Melanesia, the cultivation of the plant was diffused throughout the whole area in which it was found at the end of the eighteenth century. This conclusion is further strengthened by the fact that it is known that the Spanish introduced the sweet potato in the Philippines in the sixteenth century, and that from there it was diffused to China, Formosa, Japan, Indonesia, and southeast Asia. The argument as presented seems superficially plausible, but I believe it is possible to show (1) that it rests mainly on negative or uncertain evidence; (2) that the assumptions made are not wholly justifiable; and (3) that there is on the other hand a large body of evidence, both direct and indirect, which renders impossible any theory of the origin of the sweet potato in Polynesia as due to a Spanish introduction.

The basis of the theory is the asserted absence of the sweet potato in the Pacific area at the time of the first Spanish contacts. Let us see just what evidence there is for this statement. Mendaña discovered the Marquesas in 1595 and spent a week or so at the island of Tahuata. Referring to the food plants used by the natives, his chronicler Quiros³ speaks of breadfruit, coconuts, plantains, sugarcane, and one or two other things, but makes no mention either of yams or sweet potatoes. It is on this absence of any specific reference to the sweet potato in the Marquesas, that the assertion is based that it was unknown throughout the *whole* of Polynesia at the end of the sixteenth century. As we have no data on any of the other portions of Polynesia at this time, the universal negative is quite unjustifiable. Furthermore it may be asked, if this negative evidence is to be held conclusive and valid for the absence of the sweet potato, why is it not equally good for the yam? Neither is mentioned by Quiros, yet both were found in the Marquesas when they were revisited at the end of the eighteenth century. No one has, so far as I know, been bold enough to claim that the yam was also introduced by the Spanish, yet the negative evidence holds good equally for both. Again, Quiros' failure to mention the sweet potato is repeated by nearly all of the visitors to the group until well after the beginning of the nineteenth century. His negative evidence thus applies only to a single group where rarely in the fifty years subsequent to its rediscovery was the sweet potato of sufficient significance to attract attention. The negative evidence of Quiros is no more valid than that of Cook, Forster, Krusenstern, Lisiansky, Porter, Shillibeer, and Stewart, all of whom failed to refer to the sweet potato, although we know from Marchand⁴ that as early as 1790 the plant was there. It cannot be said, therefore, that the evidence relied on to

³ Quiros, 1: 16-29.

⁴ Marchand, 1: 91; English translation, 1: 83.

prove the absence of the sweet potato throughout all Polynesia at the end of the sixteenth century is of any value whatever.

If we turn next to eastern Melanesia, the facts are as follows. In 1568 Mendaña discovered the Solomon group and spent several months in its exploration. Neither in Catoira's account of the voyage, which is the fullest in detail, nor in any of the others, is there any reference to the sweet potato, only to taro, yams and "panaes".⁵ The latter are described as "a kind of root resembling the potato of Peru" and as "better than the potato." As the term "pana" in various dialectic variations is the word used in the Solomons for the prickly-vine yam⁶ there can be no doubt but that it was the plant referred to. Although the expedition had set out with the idea of making a settlement in any lands they might find, no attempt was made to do so here, and no reference is made by any of the chroniclers to any planting having been done. In 1595 Mendaña's ill-starred attempt at colonization took place in Santa Cruz. His chronicler Quiros describes⁷ "two or three kinds of roots like the potato" as used by the natives. It seems probable that these are to be identified with the "panaes" found in the earlier voyage to the Solomons.⁸ In 1606 in the bay of St. Phillip and St. James in northern Espirita Santo of the New Hebrides, Quiros speaks of the people eating roots with flesh of various colors, some of which "tasted like the potatoes of Peru".⁹ On the map of the bay of St. Phillip and St. James, drawn by Quiros' cartographer, Diego de Prado y Tobar,¹⁰ there is a legend stating that "their food consists of yams, potatoes,¹¹ plantains" etc. If, however, we turn to the accounts of the voyage given by Quiros' pilot De Leza (which version Friederici seems to have overlooked), what seems to be specific evidence is at hand. For he states¹² that at the bay of St. Phillip and St. James the natives had in abundance "camotes and yams." Now "camote" is a term for the sweet potato of Mexican origin adopted there by the Spanish and introduced with the plant by them in the Philippines. De

⁵ Mendaña, 1, 50, 57, 58, 123, 127, 145, 158, 2, 234, 252, 257, 274, 281, 284, 288, 292, 300, 342.

⁶ Mendaña, 2, 252.

⁷ Quiros, 1, 154.

⁸ Friederici thinks the plant referred to was the taro.

⁹ Quiros, 1, 266.

¹⁰ Quiros, 2, 471.

¹¹ The word translated "potato" here and elsewhere in this paragraph is in the original Spanish accounts "papas." This is the term used in Peru for the ordinary potato (*Solanum*), grown in the cool highlands. The sweet potato (*Ipomoea*) on the other hand was grown in the warmer coast lands, and was known as "camote" (a word of Nahuatl origin) or as "batata" (its Antillean name).

¹² Quiros, 2, 376.

Leza, however, qualifies and obscures his statement immediately by adding "or rather another smaller kind of yam." Although he subsequently refers several times to "camotes" without any qualification, it might be thought that this is rather doubtful evidence for the presence of the sweet potato here in pre-Spanish times. The evidence is, however, greatly strengthened by the account of the voyage given by Torquemada¹³ who states that *both* sweet potatoes (batatas) and ordinary potatoes (papas) as well as yams were obtained from the natives here. There is thus some evidence, at least, for the presence of the sweet potato in eastern Melanesia at the beginning of the seventeenth century, when the first Spanish contacts were made.

The basic assumption thus, on which the whole theory of a Spanish introduction rests, would appear to be insecure, since for Polynesia it is founded on evidence for one island only, and is there purely negative and really of no value. For Melanesia the assertion as to the absence of the sweet potato seems to be disproved by the positive statements of De Leza and Torquemada.

The problem has been, however, further confused by the question of the plants introduced by the Spanish. Friederici admits that in the account of Mendaña's stay at Tahuata in the Marquesas reference is made only to the sowing of maize,¹⁴ but insists that it is certain that he must also have planted a variety of other things including the sweet potato. Obviously this is nothing but pure assumption. Moreover, in arguing for the absence of the sweet potato there originally, Quiros' failure to refer to it is accepted as valid evidence that it did not exist; in arguing for the Spanish planting of sweet potatoes, his failure to mention it is taken as no proof that it did not take place. To say the least, this is hardly logical. At Santa Cruz there is no indication that any planting was actually done. Reference is twice made¹⁵ to sowing as something later to be carried out, but the mutinous and tragic events which marked the Spanish stay would seem to have given no opportunity for realizing the plan. De Leza's statements in regard to Espiritu Santo are, however, explicit, for he says that Quiros sowed various seeds and specifically mentions the potato (papas).¹⁶ This, however, as has been noted, was the ordinary potato, not the sweet potato. The upshot of the whole matter thus seems to be that there is no explicit evidence that the Spanish planted the sweet potato anywhere, either in Polynesia or Melanesia, and that, on the basis alone of the accounts of the early Spanish

¹³ Torquemada, Lib. 5, Cap. 69.

¹⁴ Quiros, 1, 23.

¹⁵ Quiros, 1: 60, 94

¹⁶ *Ibid.*, 2: 387. Zaragoza, 2 165.

explorers, there is no evidence against and some evidence for the presence of the plant in the area at the beginning of the seventeenth century.

But if direct contemporary evidence is not wholly conclusive, the indirect evidence, that the sweet potato must already at that time have been long in use in Polynesia at least, is very strong. It rests on the distribution of the plant in the eighteenth century, on its relative importance as a food, on the traditional and concrete proof of its long use, and on the lack of opportunity for its diffusion if a Spanish introduction in the Marquesas should, for the purpose of argument, be granted.

In the decade from 1767 to 1777 most of the major groups and islands in Polynesia were discovered or rediscovered and described in some detail by Europeans. Tonga and New Zealand had, indeed, been seen by Tasman more than a hundred years before, and Easter island visited by Roggeween in 1722. But these earlier contacts were brief and the information given by the discoverers was often very limited. It is true also that the Hawaiian group had probably been visited by Saavedra and Gaetano in the early sixteenth century, but no details of their findings were ever made known. If we examine the accounts given by the voyagers of the decade from 1767 to 1777 and on into the first quarter of the nineteenth century, we find the following results.

In Easter island Roggeween, its discoverer in 1722,¹⁷ and every succeeding visitor down to and including Beechey in 1825 speak of the sweet potato as abundant, grown in large plantations, and as one of the mainstays of the native's food.¹⁸ In Hawaii, Cook, who rediscovered the group in 1778, and all following visitors note its abundance and excellence.¹⁹ In New Zealand Cook, Banks, and Parkinson describe²⁰ the importance of the sweet potato in the North island in 1769, although they do not mention it along those portions of the coast of the South island which they saw. Surville's expedition, which was at the North island in the same year, also found the plant in use, both Monneron²¹ and L'Horne²² referring to it. It is unfortunate that

¹⁷ Roggeween, *Dagverhaal*, 120, *Linschoten Society Edition*, 125, Behrens, 129. Friederici is in error in saying that Roggeween does not mention the sweet potato. It is difficult to see how the explicit statement, confirmed by Behrens, could have been overlooked.

¹⁸ Gonzalez, 101, 121, 123, Hervé, 121, 123, Amich, 67; Cook (3), 1, 278-82, 288, G. Forster, 1, 571-2, 578, 582, 587, 597, La Perouse, 3, 174, 197, Kotzebue, 1, 141, Beechey, 1, 32.

¹⁹ Cook (4), 2, 234-5, 254, 3, 106-7, 110-16, 141-2, Ellis (1), 2, 74-82, 91, 98, 114, 132, 144-5, 175, 179, 205, 227, Leidy, 134, Portlock, 170, 198, Beresford, 109-10, Vancouver, 1, 170, Delano, 388.

²⁰ Cook (1), 2, 300, 313, 321, 358-66; Banks, 228; S. Parkinson, 97. For further details and discussion see Best (1).

²¹ Monneron, p. 105 (or in Macnab, 2, 287).

²² L'Horne, 319.

Tasman's contact with the Maori in 1642 was too slight for him to learn anything definite as to their food products. He does, however, mention seeing, when off the Three Kings islands, plants growing in "square beds, looking green and pleasant."²³ These must have been sweet potatoes or yams (or taro?) but we obviously cannot tell which. All that can be said is that although a hundred and thirty-five years later Cook speaks of yams as in use, neither Monneron²⁴ nor L'Horne²⁵ refer to them, and du Clesmeur,²⁶ in his journal of Marion's voyage three years later, specifically states that nothing but sweet potatoes and "pumpkins" were grown. Dumont-D'Urville in 1827 found no evidence of the use of yams at all, and went so far as to question Cook's earlier statement.²⁷ All visitors to New Zealand after Cook confirm the importance of the sweet potato in the North island, and found later that it was grown in the South island along the eastern coast as far south as Banks peninsula.

At the three extremes thus of the Polynesian triangle—Hawaii, Easter island, and New Zealand—the sweet potato was firmly established and an important or major article of food by 1778, 1722, or 1769. In all the remainder of Polynesia, however, we find a rather different state of affairs. Let us return to the Marquesas. Cook, who in 1774 was the first to revisit the group since Mendaña's day, does not specifically mention the sweet potato, although he does speak of yams and "some other roots" and states that the products of the islands were nearly the same as in Tahiti.²⁸ Forster, the naturalist who accompanied him on this voyage, likewise fails to refer to the sweet potato.²⁹ Marchand some sixteen years later, on the other hand, mentions in addition to yams "a sort of patate," i.e., the sweet potato.³⁰ In 1797 Wilson speaks of a "root like a yam,"³¹ but does not specify further. Fanning³² in 1798 makes no reference to the sweet potato. Neither Krusenstern³³ nor Lisiansky³⁴ refer to it in 1804, although Langsdorff³⁵ in his

²³ Tasman, 24.

²⁴ Monneron, *loc. cit.*

²⁵ L'Horne, *loc. cit.*

²⁶ du Clesmeur, 475. Roux in Macnab, 2: 399, confirms this.

²⁷ Dumont-D'Urville (1), 2: 469.

²⁸ Cook (3), 1: 308.

²⁹ G. Forster, 2: 10-17.

³⁰ Marchand, 1: 91; English translation, 1: 83.

³¹ Wilson, 143.

³² Fanning, 123-214.

³³ Krusenstern, 1: 161 and *passim*.

³⁴ Lisiansky, 87.

³⁵ Langsdorff, 1: 91; English edition, 1: 106.

account of the same voyage does. Porter,³⁶ Shillibeer,³⁷ and Stewart³⁸ all fail to mention it, but Roquefeuil³⁹ in 1817 and Dumont-D'Urville⁴⁰ in 1838 do. From this it would seem that in the Marquesas the sweet potato could not, during the fifty years after their rediscovery, have been a food of great importance. Jardin in 1858, in his short monograph on the botany of the group, tends to confirm this, since he says,⁴¹ speaking of Nukahiva, that the *Ipomoea batatas* "is beginning to be cultivated by the natives . . . not for their own use, but to sell to the whalers who sometimes touch here." In Handy's recent monograph⁴² on Marquesan culture, based on modern intensive study, the sweet potato is only once casually spoken of as of minor import. In the group thus, where Mendaña is supposed to have introduced the plant in 1595, it seems never to have been of much significance.

The Tuamotu group, consisting as it does only of coral islets, is not a favorable environment for the cultivation of the sweet potato, so that we are not surprised to find no reference to its use there at all. The Gambier group, of which Mangareva is the most important island, lies between the Tuamotus and Easter island. Although discovered by Wilson⁴³ in 1797, it remained unvisited until Beechey's time in 1825. He mentions sweet potatoes among the minor foods, but reports the natives as practicing very little agriculture.⁴⁴ Moerenhout⁴⁵ in 1834, two years after the coming of the missionaries, speaks of the sweet potato among the food products of the island, but repeats Beechey's statement that fruits and vegetables were little grown. Dumont-D'Urville in 1838 speaks⁴⁶ of the sweet potato as in use, but Montravel, one of his officers, states⁴⁷ in his journal that the French missionaries informed him that they had introduced the plant.

Wallis, the discoverer of the Society group in 1767, makes no reference⁴⁸ to the sweet potato. Bougainville⁴⁹ in the following year, however, speaks of it, as does Cook⁵⁰ in 1769, and is confirmed in this by both Banks⁵¹ and Parkinson.⁵² The Spanish expeditions which visited Tahiti between 1772 and 1774 specifically refer to the sweet potato as one of the food products of the island. Boenechea⁵³ speaks of the sweet potato, but says there were

³⁶ Porter, vol. 2, *passim*.

³⁷ Shillibeer, 45-6.

³⁸ Stewart, 148.

³⁹ Roquefeuil, 1: 196.

⁴⁰ Dumont-D'Urville (2), 4: 13, 20, 22.

⁴¹ Jardin, 27.

⁴² Handy, 199.

⁴³ Wilson, 114 sq.

⁴⁴ Beechey, 1: 135.

⁴⁵ Moerenhout, 1: 88.

⁴⁶ Dumont-D'Urville (2), 3: 170.

⁴⁷ *Ibid.*, 363.

⁴⁸ Wallis, 219-20, 247, 253, 262.

⁴⁹ Bougainville, 199.

⁵⁰ Cook (1), 186, (2), 89.

⁵¹ Banks, 135.

⁵² S. Parkinson, 38.

⁵³ Boenechea, 327.

"but few"; Bonacorsi⁵⁴ states that in addition to yams the natives had "a few red sweet potatoes"; Andia y Varela⁵⁵ refers to several varieties in cultivation, and Gayangos⁵⁶ in the course of his survey around the coasts of the island in 1772 secured in the district of Atehuru "sweet potatoes of a color like the yolk of an egg." That the sweet potato was, however, of only slight importance in Tahiti is clearly shown by the fact that Rodriguez, who lived for a year in 1774-75 in closest association with the natives and who visited every part of the island, refers to the plant but once.⁵⁷ Laufer, in endeavoring to substantiate the theory of a Spanish introduction, calls attention to the fact that Boenechea gave the natives seeds and sweet potatoes to plant⁵⁸ and then goes on to say that Andia y Varela speaks "a few years later" of two or three varieties as being grown. Laufer obviously seems to suggest that the sweet potatoes reported by Andia y Varela in 1774 were derived from those given the natives to plant by Boenechea two years before. This is a glaring example of a wrong conclusion being suggested by only partial presentation of facts. For Laufer omits to state that Boenechea himself explicitly reports the sweet potato as one of the native food products, and that during the time of his short stay at Mehetia and Vairua, Gayangos obtained supplies of sweet potatoes from the natives in Atehuru many miles away. He also passes over in silence the similarly explicit statements of Bougainville, Cook, Banks, and Parkinson, recording the presence of the plant four years before the Spanish first arrived. Bearing on this question is the statement made by Bligh⁵⁹ in 1792 to the effect that he found the natives "set no value on our garden products" and were indifferent to the European and other plants which he gave them. On his second and third voyages Cook does not again mention the sweet potato, nor does George Forster,⁶⁰ who was with him on the former, or Ellis,⁶¹ who was his surgeon on the latter. J. Reinold Forster, however, who accompanied his son George on the second voyage, refers⁶² to "potatoes" among the food products of the group, and Ledyard,⁶³ in his account of the third voyage in 1777, speaks of "sweet potatoes (though not in plenty)." Wilson⁶⁴ and Turnbull⁶⁵ at the turn of the century make no mention of it. Ellis the missionary, however, writing from experience gained during the second decade of the nineteenth

⁵⁴ Bonacorsi, 54-5.

⁵⁵ Andia y Varela, 275.

⁵⁶ Boenechea, 321.

⁵⁷ G. Forster, 1: 255, 263, 270, 274, 280 1, 342, 372 3, 380, 2 51, 118.

⁵⁸ Ellis (1), 1: 89.

⁵⁹ J. R. Forster, 371.

⁶⁰ Ledyard, 48.

⁶¹ Rodriguez, 81.

⁶² Boenechea, 296.

⁶³ Bligh (2), 83.

⁶⁴ Wilson, 56-90, 143-223.

⁶⁵ Turnbull, 1: 127, 151.

century, says⁶⁶ that the sweet potato is grown, but to a far less extent than in Hawaii, and adds that it is inferior and used only as a makeshift when breadfruit is scarce.

For the Australs we have no significant data until after the missionary period. In the Cook group their discoverer, for whom they have been named, had no real contact with the natives at that time, but when he did so on his third voyage,⁶⁷ makes no reference to the sweet potato as in use. Williams⁶⁸ in 1823, who seems to be the next source of information, mentions the plant, but specifically says it was introduced by the missionaries. In Tonga, Tasman,⁶⁹ who discovered the group in 1643, mentions yams but not sweet potatoes, although he refers to "other roots which we had no knowledge of." Neither Cook⁷⁰ nor Forster⁷¹ mention the plant in 1774, nor does the former on his subsequent visit in 1777,⁷² although Ellis in his account of the voyage, does,⁷³ as well as Maurelle in 1781.⁷⁴ La Perouse⁷⁵ in 1785, Hamilton⁷⁶ in 1791, D'Entrecasteaux⁷⁷ in 1793, and Wilson⁷⁸ in 1797 are all silent in regard to it. Labillardiere,⁷⁹ however, who was with D'Entrecasteaux, mentions it. Mariner, who spent many years in the group in the early nineteenth century, does not speak of the sweet potato in describing the island's food products, but does give the name for it in his vocabulary.⁸⁰ Dillon⁸¹ in 1827 speaks of it several times, and notes its presence in Rotuma⁸² and Ticopia⁸³ as well. Dumont-D'Urville, who got much of his information from Singleton, Mariner's companion, who had been in Tonga since nearly the beginning of the century, does not refer to the sweet potato in his list of foods used in the group.⁸⁴ Le Maire and Schouten, who had discovered Fotuna in 1616, make no mention⁸⁵ of the plant there. In Tonga, thus, it would seem that the sweet potato was not of great importance.

⁶⁶ Ellis (2), 1: 50.

⁶⁷ Cook (4), 1: 177, 184, 197, 211.

⁶⁸ Williams, 578.

⁶⁹ Tasman, 26-33.

⁷⁰ Cook (3), 1: 187, 204, 213; 2: 9.

⁷¹ G. Forster, 1: 430-1, 441, 444, 478; 2: 171-2.

⁷² Cook (4), 1: 225, 235, 244, 272, 280, 306-7, 332, 366, 392.

⁷³ Ellis (1), 1: 89.

⁷⁴ Maurelle, 371, 390, 406.

⁷⁵ La Perouse, 3: 247-56.

⁷⁶ Hamilton, 52-134.

⁷⁷ D'Entrecasteaux, 1: 278, 318-19.

⁷⁸ Wilson, 91-112, 223-281.

⁷⁹ Labillardiere, 2: 101.

⁸⁰ Mariner, 2: 282.

⁸¹ Dillon, 1: 261, 265.

⁸² Dillon, 2: 94.

⁸³ *Ibid.*, 134 sq.

⁸⁴ Dumont-D'Urville (1), 4: 280-2.

⁸⁵ Le Maire and Schouten, 208-14.

With Samoa we reach the western verge of Polynesia. Here Roggeveen,⁸⁶ who discovered the group in 1722, makes no mention of the plant. Bougainville had little contact with the natives in 1768 and makes no reference to the sweet potato.⁸⁷ La Perouse⁸⁸ in 1785 is also silent, as is Williams,⁸⁹ who gives us our next significant data in the early '30's of the nineteenth century. Dumont-D'Urville,⁹⁰ who was at Upolu in 1838, also fails to refer to the plant. Wilkes⁹¹ the following year includes the sweet potato among the products of the group. Pickering,⁹² who accompanied Wilkes on the expedition, does not, however, mention it, and Turner,⁹³ who came there a few years later, explicitly states that it had been introduced by Europeans and was an unimportant food.

From this survey it seems to appear that at the end of the eighteenth century, nowhere in Polynesia except in Hawaii, Easter island, and New Zealand was the sweet potato a food product of importance, and there is doubt whether it was known at all in the Samoan and Cook groups. Friederici declares that it was a significant food in the above three regions only because other foods were scarce, and that elsewhere it was of no consequence because other foods were both better and in abundance. This statement would seem to be not wholly accurate. For at least in Hawaii yams, taro, breadfruit, and bananas were found by the early visitors to be abundant, although not equally so in all islands of the group. Easter island had an abundance of yams and bananas; only in New Zealand were other satisfactory vegetable foods lacking in variety and quantity. On the other hand, in much of Polynesia, although it is true that other foods were generally in abundance, there were times between crops when these supplies largely failed, and the sweet potato ought to have been a welcome substitute, as indeed Ellis states that it was in Tahiti.

The theory of a Spanish introduction of the sweet potato into Polynesia requires us thus to believe that a food-plant which, in the group where it was supposed to have been introduced by Mendaña, was little grown and little used, was nevertheless spread from thence by way of other groups where it was equally neglected or unknown, to the extreme limits of the Polynesian world. That a wide and relatively rapid diffusion might take place of a food plant which was extensively used and eagerly sought would be intelligible, but that one little used and little cared for should obtain

⁸⁶ Roggeveen, *Dagverhaal*, 186-197, Linschoten edition, 106-173.

⁸⁷ Bougainville, 236-9.

⁸⁸ La Perouse, 3: 102

⁸⁹ Williams, 303-30; 374-416, 431-50.

⁹⁰ Dumont-D'Urville (2), 4: 92-125.

⁹¹ Wilkes, 2: 121.

⁹² Pickering, 73-78.

⁹³ Turner, 192.

such dispersion, strongly contravenes the probabilities. If Tasman's evidence for New Zealand is given any weight at all, the diffusion must have covered the distance from the Marquesas in less than fifty years; if no credence is placed on Tasman, the time available would, of course, be more than three times as long. But in this matter of diffusion from the Marquesas, however long a time we allow, there are almost insuperable difficulties in the way. For although inter-group contacts are abundantly recorded in tradition *within* Central Polynesia during the seventeenth and eighteenth centuries, the Hawaiian, Easter island, and New Zealand peripheral groups seem to have been completely isolated from all the rest of Polynesia throughout this whole period.

Each of the three outlying groups presents individual features in this respect. From Hawaiian tradition we know that communication with Tahiti occurred with some frequency in the twelfth and thirteenth centuries. These contacts and their approximate dates can, moreover, be corroborated and in large measure checked from the Tahitian end. Relations of less importance were had with the Marquesas, but no evidence is given, so far as I know, for any such contacts with either group after the fourteenth century. A diffusion of the sweet potato, therefore, from the Marquesas to Hawaii after Mendaña's visit in 1595 seems extremely improbable to say the least. At this point we may briefly refer again to the matter of the early Spanish discovery of Hawaii, and the possibility that the sweet potato was introduced there directly, prior to Mendaña's discovery of the Marquesas. It seems to be now accepted that in 1528 two of Saavedra's ships were wrecked on the islands, the few survivors intermarrying with the natives. The circumstances, however, were hardly such as to make it probable that the plant could have been introduced in this way. Gaetano seems to have visited the group some twenty-five years later, and would have had better opportunities. In view, moreover, of the extent of the Manila trade during the sixteenth century, it is not impossible that other Spanish ships may have touched there. Thus a *possibility* exists that the sweet potato was introduced in Hawaii more than two hundred years prior to Cook's time. Yet, Hawaiian traditions relating to this period are fairly full, and although they seem to record Saavedra's shipwreck, they are silent with respect to the introduction of any new foods. Furthermore, the carefully elaborated methods of cultivation, the part played by the plant in the oldest cosmogonic myths, and the fact that a number of chants and sacred charms used in connection with the sweet potato are in the more archaic form of speech, all speak for the very real antiquity of the plant's cultivation by the Hawaiian people. The case must probably be left open,

however, for on the face of it, no absolute statement either way can be made. All that appears to be reasonably certain is that a Marquesan source for the sweet potato during the seventeenth and early eighteenth centuries seems extremely improbable.

For Easter island the case is simpler. Although the available traditional data are much less complete than in Hawaii, there is no indication, either from local sources or from other neighboring islands, of any outside contacts for several centuries prior to Roggeween's discovery in 1722. Unlike the people of most Polynesian groups, the Easter islanders had no large sea-going canoes, and only a few poor ones of very small size.⁹⁴ In their own craft it would have been impossible for them to have made the long voyage to the nearest inhabited group, which lies some fifteen hundred miles away. The people of Mangareva, who were their nearest neighbors, were likewise apparently unable to make any such voyage, since they had no canoes at all, but employed sailing rafts which were used primarily within the lagoon.⁹⁵ It is true that Roquemarel⁹⁶ and Jacquinot⁹⁷ in 1838 saw several poor canoes, but Moerenhout⁹⁸ four years before had seen none; in the interval the French missionaries had come. So although Beechey reports the sweet potato in use at Mangareva, the probability that it had been carried thence to Easter island, at any rate in recent times, seems almost negligible. The people of the Tuamotus, at least in the western portion of the group, had excellent sea-going canoes, but they could hardly have been the carriers of the sweet potato to Easter island, since at no time was it grown in the group.

For New Zealand the evidence is more complete and still more convincing. A wealth of genealogical and historical tradition was preserved by the Maori, and however little confidence one may have in the older material, there can be little doubt that back as far as the thirteenth or fourteenth centuries the chronological basis of their history is fairly reliable. The abundance of material allows of pretty extensive checking, and for the relations with the Society and Cook groups much of the history is corroborated and cross-checked from material recovered there. On the basis of this data it appears that the immigrant ancestors of the dominant majority of the Maori came to New Zealand in a famous "Fleet" of six canoes from Tahiti about the middle of the fourteenth century. They found in occupation an

⁹⁴ Roggeween, Linschoten edition, 124, Gonzalez, 121; Cook (3), 1. 294; G. Forster, 558; 583, La Perouse, 2. 94; Beechey, 1-40.

⁹⁵ Beechey, 1: 143-4.

⁹⁶ Dumont-D'Urville (2), 3: 400.

⁹⁷ *Ibid.*, 422-3.

⁹⁸ Moerenhout, 1: 109.

older stratum of mixed origin, derived in part from an earlier migration from Tahiti, believed to have arrived at least two centuries before, and in part from an aboriginal population, the vague accounts of which are contradictory. According to some of the traditions the sweet potato and taro were brought with them by the earlier immigrants and had been unknown to the aboriginal folk. According to others, it was the later or fourteenth century conquerors who, not finding the sweet potato in New Zealand, sent the "Horouta" canoe back to Tahiti for it. After the coming of the "Fleet" communication was kept up at intervals with both Tahiti and Rarotonga, but this ceased entirely in the fifteenth century. Although one or two canoes sailed *from* New Zealand after that date, as late indeed as the seventeenth century, none ever returned, and no foreign canoes again came from the outside world.⁹⁹ The Maori had thus been entirely isolated, so far as traditional evidence goes, during the whole period during which any diffusion of the sweet potato, if introduced by the Spanish, could have occurred. The actual introduction, thus, of the plant in New Zealand took place according to traditional data at the latest in the middle of the fourteenth century, at the earliest sometime in the twelfth or even before.

Further light on the problem comes from the Moriori of the Chatham islands, isolated five hundred miles or more to the eastward of New Zealand. The indications are clear that they represent the descendants of a group of immigrants who came from New Zealand, at a date which traditional evidence would place about the beginning of the thirteenth century.¹⁰⁰ These traditions recount that they found it impossible, on account of different climatic conditions, to grow in their new home the sweet potato and taro which they had brought with them. In consequence the plants died out. When the islands were discovered by Broughton¹⁰¹ in 1791, neither the sweet potato nor the taro were in use, but the names for them were still remembered, and the people had preserved a recollection of their former use. No contacts either with New Zealand or any other portion of Polynesia occurred, so far as known, between the time of the settlement of the islands and their conquest by the Maori in the early nineteenth century. It is difficult to explain these facts other than by accepting that the sweet potato was already known and in use in New Zealand in the thirteenth century, thus corroborating those Maori traditions which speak of its importation from Tahiti by the earliest immigrants, who had settled in New Zealand in the twelfth century. This also accords with the traditions of the Maori of the South island, according to which the sweet potato was intro-

⁹⁹ Best (2), 292-293.

¹⁰⁰ Skinner, 16-21.

¹⁰¹ Vancouver, 2: 84 sq.

duced there toward the end of the thirteenth.¹⁰² On this basis, the other traditions of a later introduction in the fourteenth century might be explained perhaps as referring to the importation of certain varieties only. The contradictions can also be explained in other ways.

Still further corroborative evidence of the very considerable antiquity of the cultivation of the sweet potato in New Zealand is supplied not only by frequent references to the plant in the most archaic cosmogonic chants and myths, its close association with one of the major Maori gods, and the elaborate religious rituals connected with its planting, cultivation, and storage,¹⁰³ but also by concrete indications given by the great age and area of the sweet potato plantations and by the influence which this food had exerted on the material culture of the people. When the earliest English missionaries and settlers came to New Zealand in the early decades of the nineteenth century, they found very extensive ancient clearings which had been made for the cultivation of the sweet potato. In some comparatively small districts these were estimated at over eight hundred acres.¹⁰⁴ Pits, from which was obtained the gravel necessary for the hills in which the plant was grown, were found that had been excavated to depths of five or six feet, and covering many acres.¹⁰⁵ In some of these, large trees of great age were growing. The magnitude and demonstrable age of these once cultivated areas are thus as incompatible with an introduction of the sweet potato as late as the seventeenth century, as is the abundance and complexity of its associated rituals.

In his argument in favor of Spanish introduction, Friederici¹⁰⁶ insists that the Maori accounts of the introduction of the sweet potato prove that this really occurred very late, since the canoes in which the immigrants came were "doubtless" double canoes, as no other kind would have been able to make the voyage, whereas the "Horouta" canoe, which by tradition brought the sweet potato, was not a double canoe. Therefore, as the double canoe was in use in New Zealand in Tasman's time in 1642, but had largely gone out of use when Cook came in 1769, the introduction of the sweet potato must have been subsequent to the period of Tasman's visit, as prior to that time the inference is that the single canoe was not in use. The facts of the matter are that of the six canoes which made up the historic "Fleet" only the "Arawa" was a double canoe, the others including the "Horouta" being large outrigger canoes of the type long and often used throughout Polynesia for long distance voyages.¹⁰⁷ In New Zealand, the outrigger type

¹⁰² Best (1), 7.

¹⁰³ Best (1), *passim*.

¹⁰⁴ *Ibid.*, 62.

¹⁰⁵ *Ibid.*, 60 sq.

¹⁰⁶ Friederici, 483 sq.

¹⁰⁷ Best (2), 279 sq.

of canoe went out of use much earlier than the double. The argument is also absurd, since it implicitly asserts that the whole Maori conquest and settlement had taken place less than six generations before Cook's visit, which is utterly incompatible with everything known of Maori culture.

A further argument in favor of the antiquity of cultivation of the sweet potato in Polynesia lies in the large number of varieties known in Easter island and New Zealand. Absolutely precise data are lacking, but with every allowance for duplication and overlapping, the number known to the Maori must have been at least twenty or twenty-five. Friederici, after discounting far too heavily the data on the number of varieties known, says that since there were three (four) early Spanish contacts in the Pacific, extending over a stretch of forty years, they might well have brought with them a number of varieties, and that these in a period of a hundred and fifty or two hundred years might easily become so much further diversified as to account for the facts. He quite forgets, however, that (1) the greatest number of varieties existed not in those places to which the Spanish went but in Easter island and New Zealand, which were most remote from any of their contacts; and (2) that the Spanish touched only once at each of four groups, so that according to his theory different varieties must have been taken to each, and the great number of varieties in Easter island and New Zealand must have been due to an *eastward* diffusion of three of these from Melanesia, an almost impossible assumption. Furthermore, this theory leaves out of consideration that the number of varieties of the sweet potato known in Peru, whence the Spanish are supposed to have brought it, is small compared to that recorded in Polynesia.

In the face of all the evidence it thus seems clear that a diffusion of the sweet potato during the seventeenth and eighteenth centuries from the Marquesas to the outlying groups in Polynesia would have been practically impossible, and we must admit that certainly in New Zealand, and with great probability in Easter island and Hawaii, the sweet potato had been in use as an important food product long before the earliest Spanish contacts with Polynesia took place. Further, it is clear that in much of the rest of Polynesia, although known and cultivated in the eighteenth century and probably long before, it was of little economic or other significance, and was generally neglected. That it was grown in Tahiti as early as the twelfth century would follow from its probable introduction thence into New Zealand at that time. We know that racially the population of Central Polynesia underwent a profound change in early mediaeval times, as the result apparently of a large scale immigration of newcomers from the west. Although we are dealing here admittedly with conjecture only, it may be that

one of the consequences of this phenomenon was the gradual neglect of the sweet potato in Central Polynesia, where earlier it may have held a position of greater importance. The detailed comparative studies of Polynesian culture which have been made during the last few years have demonstrated that we may apparently distinguish in it an ancient and a more modern stratum. The former now survives most abundantly in the marginal areas, whereas it has been overlaid and in some cases largely superseded by the later culture in the central area. It is precisely in these marginal areas that the sweet potato was of the greatest importance at the time of the discovery, and seems to have been an old established food. The correlation is difficult to ascribe to chance, and no selective diffusion from an introduction by the Spanish in the Marquesas in the sixteenth century can account for the facts, even if diffusion had been possible, which I believe we may say it was not. I can see, therefore, no escape from the conclusion that the sweet potato had spread throughout Polynesia in pre-Columbian times, and that consequently the theory of a Spanish introduction by way of the Marquesas is untenable.

Turning now to the data available for the period of rediscovery in eastern Melanesia, a somewhat peculiar situation is disclosed. In Fiji although Bligh¹⁰⁸ passed by the northern islands in 1789 the earliest known European contact was that of the "Pandora's" tender in 1791, but of this we have unfortunately no accounts.¹⁰⁹ Bligh¹¹⁰ on his second voyage in 1792, does not mention the sweet potato, nor does Dillon¹¹¹ in his account of his adventure in 1813. Dumont-D'Urville,¹¹² who in 1827 was the first to make any extended reconnaissance, also does not mention the plant as a food product there, nor does he refer to it¹¹³ during his second visit in 1838. So far as I know, Wilkes¹¹⁴ in 1840 is the first person to speak of the sweet potato here, but he omits it from his list of the native products, and mentions it only casually at Oneata, one of the small islets of the eastern group, where Tahitian missionaries had been in residence since 1820, and where he also mentions corn. Williams,¹¹⁵ who came to the islands in 1845, speaks in 1858 of the sweet potato as grown in abundance, but at that time white missionaries had been in the group for nearly a quarter of a century and beche-de-mer and other traders longer still. Seeman¹¹⁶ in 1860, in a detailed discussion of the vegetable foods, speaks of the sweet potato only in con-

¹⁰⁸ Bligh, 179 sq.

¹⁰⁹ Hamilton, 166-7, Edwards, 51, 81.

¹¹⁰ Bligh (2), 231 sq.

¹¹¹ Dillon, 1-1-37.

¹¹² Dumont-D'Urville (1), 4-397-458.

¹¹⁴ Dumont-D'Urville (2), 4-171-261, 381-409.

¹¹¹ Wilkes, 3-170.

¹¹⁵ Williams and Calvert.

¹¹⁶ Seeman, 306.

nection with the white potato, shalots, and turnips, all of European introduction. He also states that it does not seem to be much valued and suggests that it had been brought in from New Zealand. Since the older Fijian term¹¹⁷ for sweet potato is *a-karai-ni-avalagi* meaning "European vine," it would appear to show unmistakably that, in confirmation of the other evidence, the sweet potato was absent in Fiji until introduced sometime in the nineteenth century. In view of the close contacts which the Fijians had with Tonga, this would hardly have been expected, yet in the face of the available evidence it seems difficult to draw any other conclusion.

Our first information relative to the New Hebrides, after Quiros' visit in 1606, comes from Bougainville in 1768. In his brief account¹¹⁸ he makes no mention of the sweet potato. Cook¹¹⁹ on his second voyage in 1774 came into contact mainly with Tanna and Mallicolo, but only at the former does he mention "a sort of potato." Forster¹²⁰ makes no reference to the plant. We get little further data on the group until the missionary period of the middle of the nineteenth century. Codrington,¹²¹ in his general work on Melanesia published in 1891, in speaking of the food products of the region, does not refer to the sweet potato, nor so far as I can find, do the other missionaries such as Inglis,¹²² Lamb,¹²³ Paton,¹²⁴ or Patteson,¹²⁵ who have written of particular islands, or Erskine,¹²⁶ Goodenough,¹²⁷ or Markham,¹²⁸ who cruised among the islands in the middle of the century. Brenchley¹²⁹ however does mention it at Aneityum and Tanna in 1865. Speiser,¹³⁰ who is our most recent student of the whole area, says that today the sweet potato is but little used, and appears to be known only in northern Espiritu Santo, Ambrym, and Aneityum. To this Humphreys¹³¹ adds Tanna. It may be noted that the only term for sweet potato reported¹³² in any of the New Hebridean languages (Aneityum) is "waleh" or "inwaimeteuc," neither of which shows any obvious relationship to the "kumara" used throughout Polynesia.

Cook in 1774 was the discoverer of New Caledonia. His contact was brief, and neither he¹³³ nor Forster¹³⁴ mentions sweet potatoes among the

¹¹⁷ Tregear, 182 (under "kumara").

¹¹⁸ Bougainville, 242 sq.

¹¹⁹ Cook (3), 2: 77.

¹²⁰ G. Forster, 2: 221, 226, 270, 290, 298, 336, 347.

¹²¹ Codrington, 319 sq.

¹²⁸ Markham, 175 sq.

¹²² Inglis (2).

¹²⁹ Brenchley, 199, 213.

¹²³ Lamb.

¹³⁰ Speiser, 132.

¹²⁴ Paton.

¹³¹ Humphreys, 62. For Aneityum, 109.

¹²⁵ Patteson.

¹³² Inglis (1), 173.

¹²⁶ Erskine, 299-347.

¹³³ Cook (3), 2: 116, 122-3.

¹²⁷ Goodenough, 273 sq.

¹³⁴ G. Forster, 2: 388, 401, 415.

foods seen at Balade. D'Entrecasteaux¹³⁵ in 1793 seems to have been the next observer. He also fails to refer to the sweet potato, but in Labillardiere's account¹³⁶ of the same voyage, it is stated that plantations of yams and sweet potatoes were seen at Balade, and both he¹³⁷ and Rossel¹³⁸ give in their vocabularies the term "tani" as used for the plant. As in the New Hebrides the word used for the sweet potato has thus no apparent relation to the universal Polynesian form. Except for these references in 1793 no one, so far as I know, has mentioned the sweet potato as grown in New Caledonia. Neither Erskine¹³⁹ in 1849, nor Brenchley¹⁴⁰ in 1865, speaks of it. Lambert¹⁴¹ in a whole volume devoted to the island also omits it as does Leenhardt.¹⁴² Sarasin¹⁴³ says it is of recent introduction. For the Loyalty islands I can find no reference to the plant in the older accounts, but Hadfield,¹⁴⁴ the most recent writer on the group, states that it is grown today.

Carteret¹⁴⁵ in 1767 seems to have been the first to rediscover the Santa Cruz group but makes no reference to the sweet potato. In 1793, however, D'Entrecasteaux¹⁴⁶ records the use of "patates sucr  " at Ndeni itself, and Dillon¹⁴⁷ confirms this for Vanikoro in 1826. The Solomons were also rediscovered by Carteret in 1767, but no mention is made¹⁴⁸ of the sweet potato as in use by the natives. Bougainville¹⁴⁹ a year later also fails to mention it, and the same is true of Surville,¹⁵⁰ D'Entrecasteaux,¹⁵¹ Labillardiere,¹⁵² and Dumont-D'Urville.¹⁵³ Not until after the middle of the nineteenth century do we begin to get much detailed data for the group. Neither Codrington¹⁵⁴ nor the other later missionaries refer to the sweet potato, nor does Brenchley.¹⁵⁵ Guppy¹⁵⁶ speaks of it as one of the foods in the western islands, Ribbe¹⁵⁷ mentions it in Rubiana and the Shortland islands, and Frizzi,¹⁵⁸ writing of the Nasioi in Bougainville, says that the sweet potato has been recently introduced there, and is rapidly supplanting the yam. Parkinson,¹⁵⁹ however, who was in the same area a generation earlier, does

¹³⁵ D'Entrecasteaux, 1: 327-361.

¹³⁶ Labillardiere, 2: 195.

¹³⁷ Labillardiere, 2: 232.

¹³⁸ D'Entrecasteaux, 1: 580.

¹³⁹ Erskine, 348 sq.

¹⁴⁰ Brenchley, 342-4.

¹⁴¹ Lambert, 214 sq.

¹⁴² Leenhardt, 106 sq.

¹⁴³ Surville, in Fleurieu, 124 sq. Monneron, in LaBorde, 50 sq.

¹⁴⁴ D'Entrecasteaux, 123-25, 383 sq.

¹⁴⁵ Labillardiere, 2: 222 sq.

¹⁴⁶ Dumont-D'Urville (2), 5: 17-122.

¹⁴⁷ Codrington, 319 sq.

¹⁴⁸ Brenchley, 248-93.

¹⁴⁹ Sarasin, 61.

¹⁵⁰ Hadfield, 71.

¹⁵¹ Carteret, 348-63.

¹⁵² D'Entrecasteaux, 1: 369.

¹⁵³ Dillon, 2: 273.

¹⁵⁴ Carteret, 365.

¹⁵⁵ Bougainville, 258 sq.

¹⁵⁶ Guppy, 82.

¹⁵⁷ Ribbe, 223 sq; 262 sq; 307 sq.

¹⁵⁸ Frizzi, 25.

¹⁵⁹ R. Parkinson, *passim*.

not refer to it. Ivens¹⁶⁰ in a recent detailed study of the southeastern islands is silent in regard to it. He does include it in his dictionary,¹⁶¹ however, and notes that in addition to its Polynesian name of "kumara," it is also known as "uhi ni haka," i.e., the imported yam.

From all this it would appear that, although in Fiji the presence of the sweet potato is not attested before 1840 when it was called the "European-vine," it was in use in New Caledonia and the Santa Cruz group in 1793. For the New Hebrides and Solomons there is no mention of its cultivation until the missionary period of the middle of the nineteenth century and after, and this modern information shows that its distribution is sporadic. Although contacts between Fiji and Tonga were frequent, and between Fiji and Samoa somewhat less so, its relations with the other groups in eastern Melanesia were slight. The Fijians made extremely good canoes but were not themselves much given to long distance voyaging. Western Polynesia's relations with the rest of eastern Melanesia were rather by way of Rotuma and Ticopia and so to the Santa Cruz group. By this route a diffusion of the sweet potato by way of the Banks islands and New Hebrides to New Caledonia would have been possible. It is, however, much more probable that the introduction in New Caledonia (if it ever occurred) was directly from Tonga by way of the Loyalty islands, inasmuch as we know of unintentional drifts thither within the historical period. Similar drifts are likely also to have taken place to the New Hebrides. Yet although Cook¹⁶² in his day and others since have noted the linguistic similarity between Tongan and the dialect of Balade in New Caledonia, where Labillardiere reports the sweet potato in 1793, the names in use for it there as well as in Aneityum in the New Hebrides are, as we have seen, totally different from that employed in Tonga and all the rest of Polynesia. Cook¹⁶³ also noted Tongan analogies in the language spoken in the bay of St. Phillip and St. James in Espiritu Santo in the New Hebrides, a fact confirmed by Ray¹⁶⁴ in his recent monograph on Melanesian languages. Unfortunately the word for sweet potato is not included in any of the brief vocabularies which have been published, so that no comparison can be made.

Definite conclusions in regard to a Spanish origin for the sweet potato in eastern Melanesia are thus pretty certain. There is no positive evidence of any Spanish planting anywhere, only the possibility that Mendaña *might*

¹⁶⁰ Ivens (1).

¹⁶¹ Ivens (2), 48.

¹⁶² Cook (3), 2 106, 120.

¹⁶³ *Ibid.*, 91.

¹⁶⁴ Ray, 16.

have introduced it in Santa Cruz. In the New Hebrides at their rediscovery the sweet potato was not reported; today it is sporadic and little used. In Santa Cruz it has been reported by all observers since 1793, but it could just as well have reached there by normal diffusion from Tonga by way of Rotuma and Ticopia as be traceable to the dubious Spanish introduction. If the sweet potato was really ever grown in New Caledonia, it could well have come from a Polynesian (i.e., Tongan) source. It might, of course, be argued that all western Polynesia, at least, received the sweet potato from Melanesia after a Spanish introduction. Such an argument would, however, have to rest its case solely on Santa Cruz. And although a diffusion eastward from Santa Cruz by way of Ticopia and Rotuma is theoretically possible since trade and other relationships along this line are known to have occurred, the contributory evidence afforded by data on cultural diffusion in this region seems rather in favor of a westward and not an eastward movement. The evidence is possibly less specific than in Polynesia, but I think we are justified in finding that there is no reason to believe that the sporadic occurrence of the sweet potato in eastern Melanesia, as described by the explorers of the end of the eighteenth century, is to be attributed to an introduction by the Spanish at the beginning of the century before.

In Polynesia I have tried to show that a diffusion of the sweet potato from a purely hypothetical introduction in the Marquesas was incompatible with the facts and physically impossible. In Melanesia, I have, I believe, brought forward enough evidence to show that a Spanish origin for the plant is also inadmissible. With a Spanish source of introduction in the sixteenth and seventeenth centuries thus eliminated, we are brought face to face with the problem of pre-Columbian contacts between South America and Polynesia, and must explain the presence of the sweet potato in the Pacific as due either to Polynesian voyagers who, reaching American shores, brought back the plant with them on their return to their homeland, or to Peruvian or other American Indians who sailed westward and carried the sweet potato with them to Polynesia thousands of miles away. In either case the similarity of name for the plant in Polynesian and Kechua speech is a striking fact and one upon which great stress has been laid. In a later article I hope to discuss this, as well as some other aspects of the problem thus raised.

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NOTES ON THE PUEBLO CULTURE IN
SOUTH-CENTRAL NEW MEXICO
AND IN THE VICINITY OF
EL PASO, TEXAS

By W. S. STALLINGS, JR.

FORI WORD

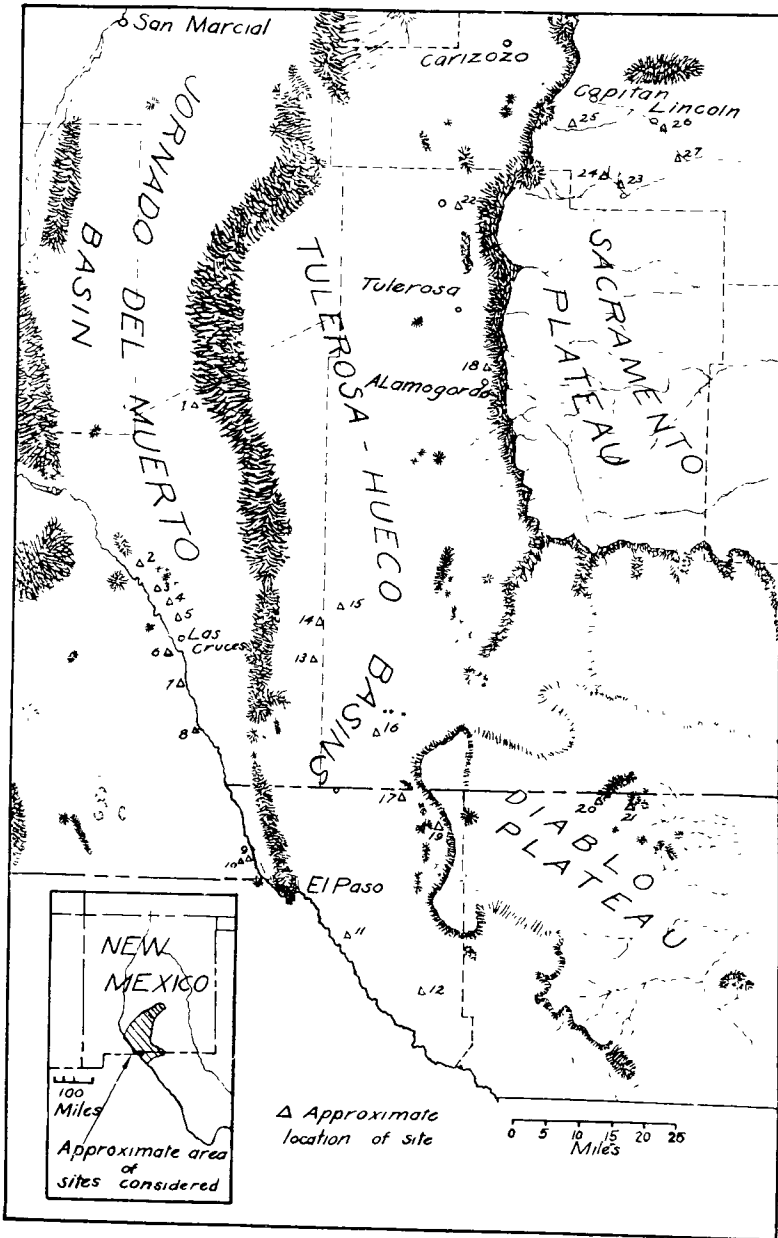
THE object of this paper is to present some data about an area of which the archaeology is practically unknown. Since in a short essay it is impossible to cover all phases, it is limited to the physiography in its relation to the archaeological sites and to pottery, for I believe these and architecture are the three most important features in an introductory study of the archaeology of a Pueblo district at the present time. So little excavation has been done that a worthy presentation of the local architecture is out of the question; and though there is excellent stone work in the area, this, too, must take a subordinate position.

The compilation of the data has been made possible through the generous help of the amateurs of the district. I am particularly obliged to Mr. and Mrs. R. B. Alves of El Paso, who gave me unlimited access to their extensive collections and escorted me to many of the sites. I owe much to Mrs. G. Windsor Smith of El Paso, and to Mr. L. A. Cardwell of Las Cruces. Also, I wish to thank the personnel of the El Paso Public Library, Mr. John Stuart of Mesilla Valley, Mrs. James of Doña Ana, Mrs. Olmstead of Lincoln, and Mr. Bonnell of the Ruidosa, for their courtesies and aid. Finally, I wish to extend to Mr. C. B. Cosgrove my appreciation for the use of plates of several artifacts which he uncovered, and to thank Dr. Byron Cummings and Mr. E. W. Haury for their valuable aid and criticism.

INTRODUCTION

The region under discussion, on the southeastern periphery of the Pueblo culture area, has but comparatively recently incited the interest of the Southwestern archaeologist.¹ This interest has been aroused mainly through the efforts of amateurs, of whom, because of their persistence and influence, I must mention Colonel Martin L. Crimmins and Mrs. R. B. Alves, both vitally associated with the El Paso Archaeological Society. Under its auspices Mr. and Mrs. C. B. Cosgrove excavated a site at Three Rivers, New Mexico, in 1925 and made a reconnaissance of the Pueblo cul-

¹ Ellsworth Huntington, geographer, noted the occurrence of three sites in 1914, in *The Climatic Factor*, 192-72 (Carnegie Institute of Washington (Washington), Publ. 1914).



MAP 1. Physiographic sketch map of south-central New Mexico and the vicinity of El Paso, Texas.

ture remains near El Paso.² Since then several investigators have worked in the region: Mr. K. M. Chapman, Mr. M. R. Harrington, and Mr. Wesley Bradfield.³ Mr. and Mrs. Cosgrove, on a second trip, and Dr. Frank H. H. Roberts, Jr. have worked in the area with regard to Basket Maker material, which lies outside the scope of our paper.⁴

LOCATION AND PHYSIOGRAPHY

The ruins here considered lie in an area which consists roughly of the southern part of the Jornada del Muerto basin, New Mexico; the Rio Grande valley from Fort Seldon, New Mexico, to Fabens, Texas; the Hueco basin in Texas and New Mexico; the southern half of the Tulerosa basin, New Mexico; the Sacramento plateau and associated mountains on the east of the Tulerosa basin; and the adjacent Diablo plateau to the south of the "highlands" and east of the Hueco basin. (See map 1.)

The Jornada del Muerto is separated on the west from the Rio Grande by the Sierra de Fra Cristobal and the Sierra de los Caballos. At the southern base of the Sierra de los Caballos the Rio Grande has cut its valley through the Jornada del Muerto basin southeastward to El Paso, where it cut around the southern extremity of the Franklin mountains to meet the Hueco-Tulerosa basins extending northward. Dividing the Jornada del Muerto and Hueco-Tulerosa basins north of the Franklin mountains are the Organ and San Andres mountains. These mountains are of bold relief and are the source of extensive bahadas. They support no large timber, and indeed, are for the greater part devoid of soil. Their altitude rises more than 8,500 feet above sea level, while the desert plains they separate average about 4,000 feet. To the east of the Tulerosa basin the highlands appear as something entirely different: a land of mountain streams, big timber, and general verdure. Speaking of the Sacramento mountains which help comprise the "highlands," Meinzer and Hare⁵ say:

² Mr. and Mrs. C. B. Cosgrove, Preliminary Survey of the El Paso Pueblo District, 1925. (Manuscript.)

³ K. M. Chapman, An Archaeological Site in the Jornada del Muerto, New Mexico—El Palacio, 20: 6, Santa Fe, 1926.

M. R. Harrington, A New Archaeological Field in Texas—MAIHF-IN 5. 3, 1928

Wesley Bradfield, Excavation in the Sacramentos—El Palacio, 37: 1-7, Santa Fe, 1929

⁴ A. V. Kidder, Report of the Peabody Museum Expedition to the Mimbres Valley, New Mexico—Season of 1927 (Privately issued manuscript.)

Frank H. H. Roberts, Jr., Recent Archaeological Developments in the Vicinity of El Paso, Texas—SI-MC 81, no. 7, Washington, 1929.

⁵ O. E. Meinzer and R. F. Hare, Geology and Water Resources of the Tulerosa Basin, New Mexico. U. S. Geol. Survey, Water Supply Paper 343, Washington, 1915.

They consist essentially of a great plateau, which in its highest parts rises to more than 9,000 feet above sea level, and approximately a mile above the desert plain to the west.

The other principal mountains associated with that plateau are the Sierra Blanca and El Capitan.

South of the "highland" country and east of the Hueco basin, comparatively low ranges, the Hueco and Finley mountains, mark the western border of the Diablo plateau.

SITES

The occurrence of human habitations in association with certain distinct, characteristic, physiographic phenomena has long been recognized. The vicinity of El Paso is no exception. The sites, at least for the present, are best classed as to their occurrence in relation to physiographic features. On this basis they fall into four groups: Rio Grande valley sites, basin sites (Hueco-Tulerosa and Jornada del Muerto), tank sites (Diablo plateau), highland sites (Sacramento plateau and associated mountains).

Rio Grande valley sites. — The sites of the Rio Grande valley from Fort Seldon, New Mexico, to Fabens, Texas, are not valley sites, strictly speaking, since they are not located in the valley proper. However, their former populations were evidently dependent on the river for their water supply and on the valley for their farming land, hence the application of the term. The sites are at intervals along the edge of the basins, and overlooking the river valley. In some cases they are as far as three miles from the present bed of the river. They are evidenced by scattered sherds, beads, worked rocks, etc. Discernible house ruins are so scarce as to be nearly negligible.

Along the southern bank of the Rio Grande from the vicinity of Doña Ana to a point opposite the El Paso Portland Cement Plant, about four miles up the river from El Paso, at various places the river has cut terraces which have been partly covered by sand dunes that have drifted down to the river's edge. Sites occur at intervals on these terraces, and here and there in the dunes behind. The character of their evidence is similar to that of the other valley sites.

Basin sites — These have been divided into two sub-groups: basin sites proper, and badhda or outwash-plain sites.

The former are out in the sand-swept basin desert around and overlapping what appear to be old lake beds. Meinzer and Hare state that these are not true lake beds, but are depressions caused by eolian excavation."

Since in places the excavation would have closely approached the water table, plant life would have grown with greater facility, and so the excavations would have afforded the ancient settlers their farming land. During the torrential rains the depressions become water depositories. A marked feature of the basin sites is their great expanse of sherds and associated artifacts, the material may extend for a mile and more. Visible house remains are not common, but they can be located by diligent search.

The outwash-plains sites no doubt owe their occurrence to former springs or streams that sallied from the near-by mountains. An extensive scattering of sherds is also a feature here.

Tank sites.—At three known places and probably many others, groups of rocks bearing springs and tanks outcrop in the desert plateau to the east of the Hueco basin. These tanks form veritable oases and have been the rendezvous of people since early times. The rocks are profusely decorated with petroglyphs of many descriptions. Early Spaniards, Mexicans, "Forty-Niners," as well as every group of Indians that passed that way, seem to have left their marks, either by alphabetic name or symbol. Pueblo sherds are found, but not abundantly, and to my knowledge there have never been found the house remains of a Pueblo people. Mr. and Mrs. Cosgrove have offered the opinion that the tanks were used only by trading and hunting parties and have never been a Pueblo settlement except for a short time.⁷

Highland sites.—The highland sites with which I am acquainted are associated with the mountain streams and with two exceptions are found on benches and small mesas 50 to 100 feet above the stream's banks. All of the sites have been and are undergoing strenuous erosion, which has, in all cases but two, reduced the surface indications to scattered sherds. The highland sites are small in contrast to the basin sites.

POTTERY

The bulk of the pottery is of two types: a native black-on-white, and a peculiar native-decorated brown ware. Other wares occur in many varieties, and the list given below is probably not complete. Odd sherds turn up here and there, but in such small fragments that their identity is uncertain. Because excavation has been very limited, complete pieces are few, and the greater part of the following data has been derived from the use of sherds.

Native black-on-white ware.—Mr. and Mrs. Cosgrove recognized this in

⁷ Cosgrove, 1925.

1925,⁸ and have been calling it "Middle Rio Grande black-on-white," but they now suggest some other name.⁹ While I was in the field, unacquainted with the previous designation, I referred to the ware as "El Paso black-on-white." However, Dr. Mera, of the Laboratory of Anthropology at Santa Fé, informs me that it occurs in different varieties as far north as Santa Fé. Accordingly, a regional designation may be postponed until a suitable one can be chosen.¹⁰

The paste of this ware ranges from a grey to a dirty white and is homogeneous throughout. The tempering material was very fine in texture and was abundantly used, giving the appearance of a fine grain concrete to the pottery. The pottery was well fired and is very hard. The slip varies from a dull pearl grey, the usual, to a white. A few sherds show a burnished black interior, but the normal sherd was found to have no superficial color, except that of the design. The interiors of ollas, and often the exteriors of bowls, were roughly scraped while still damp, producing a scored or striated appearance. The degree of coarseness to which this was carried is distinctive. The surfaces not scored were crudely smoothed. The paint was a dull slate black, which was often overfired through a brown to a brick red. The brush work usually shown is poor, with lines overdrawn, of varying thickness, etc. The designs are exclusively geometric, and with few exceptions, rectilinear. The designs are simple, being composed of broad lines, broad lines and dots, narrow parallel lines, hatching, triangles, triangles along lines, cross-hatching, checkerboard, and diamond figures. There was some use of the massing of black and of negative designs. The upper four rows of plate 1 illustrate sherds with typical design elements.

Bowls.—The bowls are both deep and shallow, with decidedly flat bottoms and steeply rising sides. In many cases the sides were attached after the bases had been fashioned and allowed to harden. A slip was not always applied to the exterior. On some of the bowls the uppermost one or two coils were left unsmoothed on the exterior but flattened. The rims terminated directly and were painted. Decoration was always on the interior, and apparently an undecorated area was customarily left in the center of the bowl. The bowls represented in plate 2*a, b* were recovered from the site near Three Rivers, New Mexico, by Mr. and Mrs. Cosgrove, and are now in the possession of the El Paso Public Library. The bowl figured

⁸ *Ibid.*

⁹ As the paper goes to press the ware has been named "Chupadero Black-on-White" (H. P. Mera, Chupadero Black-on-White, Laboratory of Anthropology Archaeological Survey, Bulletin no. 1, 1931).

¹⁰ Letter to the writer.



Pl. 1. Native black-on-white pottery. Sherds showing typical design elements

as *c* is in the collection of Mr. and Mrs. Alves. Plate 2*f* represents, in cross-section, a side-bottom sherd of a bowl enlarged twice its size to show the decided flatness of the bottom.

Ollas.—The mouths are small, the necks constricted from the vertical, causing a slightly flaring lip. The bodies are globular with flat bases that trend to the concave. The handles consist of two or three fingers of clay joined one alongside of the other and extending outward and downward from immediately below the rim to rejoin the ollas at the shoulder. The slip was applied to the entire exterior of the vessel, but only to the neck on the interior. The rest of the interior was marked by the characteristic scoring mentioned before. The main design was placed on the area from the neck to a line above the base and was inclosed by wide (averaging a quarter inch) border lines. Broad lines, dots, a combination of the two, and the checkerboard design was used to decorate the exterior of the neck. The rim was always painted. Lines and dots were often used to decorate the interior of the lip. The olla shown in plate 2*c* was recovered by Mr. and Mrs. Cosgrove from the ruin near Three Rivers, and is now in the El Paso Public Library.

Miscellaneous forms.—The fragmentary jar shown in plate 2*d* is from a site near Lincoln, New Mexico, and is in the collection of Mrs. Olmstead. Plate 2*g* represents a side-bottom sherd of a jar, enlarged twice. There is in the collection of Mr. and Mrs. Alves the neck of a canteen.

Affinities and extent.—Within the area under discussion the prevalence of the ware seems to be, in general, to the southern and western part, more specifically, in the valley and southern basin sites. As the "highland" sites are approached the percentage of the ware found decreases, but it is still abundant.

From the descriptions of Dr. and Mrs. Kidder and Mr. Nelson¹⁰ affinities with other Rio Grande black-on-white wares are to be inferred. As stated, the ware extends as far north as Santa Fé. Relationships are also evident with Upper Gila black-on-white, especially in the extensive use of "two or three finger" handles on ollas. The limit of Pueblo sites to the southeast, down the Rio Grande, is not known, and to the south the desert basins of Chihuahua remain an archaeological *terra incognita*. To the west the ware is found as far as the Mimbres area. Fewkes pictures a canteen of

¹⁰ A. V. Kidder, Pottery of the Pajarito Plateau and Some Adjacent Regions in New Mexico. AAA-M 2: 407-462, no. 6, 1915. M. A. and A. V. Kidder, Notes on the Pottery of Pecos. AA n.s., vol. 19, 1917. N. C. Nelson, Chronology of the Tano Ruins, New Mexico. AA n.s., vol. 18, 1916.

this ware.¹¹ This piece might be accepted as intrusive if it were not for data published in El Palacio, February 11, 1928. There is recorded the occurrence in the Mimbres area of sherds similar to the ware under discussion, the percentages varying up to twenty-two percent of the total decorated wares of respective sites. These data indicate that the "El Paso" ware was also native to certain Mimbres sites. Incidentally, this pottery occurs in greater comparative abundance when associated with an ascending percentage of Casas Grandes, Middle Gila polychrome, an "coarse brown red ware" sherds, and with a declining percentage of Mimbres sherds.

Native-decorated brown ware.—The material of this ware available for study is incomplete, and a satisfactory description has not been forthcoming. Probably some outstanding characteristics remain unobserved and generalizations now made will have to be altered somewhat in the future. However, significant features are known and data sufficient for identification have been obtained.

I should like to offer "El Paso decorated brown" as a name for this ware.^{11a}

There seem to be two phases: a black-on-brown, and a polychrome phase. Sherds of the former are relatively scarce. The designs shown are simple combinations of lines. The polychrome feature in bowls usually consists in the application of red and black to the whole of the interior, while the exterior remains an undecorated brown, except for a broad black line bordering the rim. Sherds of ollas show red and black decoration confined to the upper two-thirds of the exterior and to a broad black line bordering the interior of the rim. Occasionally more or less organized lines were allowed to "run" down the side of the interior from this line. The principal designs of the polychrome phase are composed of a series of wide parallel lines, sometimes placed at right angles, wide stepped lines; and triangles along lines.

The bowls seem usually to be more than hemispherical in shape, i.e., compared to a ball with the top cut off slightly above the mid-line. Sherds of ollas indicate a variety of shapes. The lips are either outcurving or nearly vertical. The latter case may be associated with jars instead of ollas. Bases

¹¹ J. Walter Fewkes, *Archaeology of the Lower Mimbres Valley, New Mexico*, SE-MC 63, no. 10, pl. 8, 1914.

^{11a} The name "El Paso Polychrome" is now suggested, in lieu of the above, as being more in accordance with the forms of nomenclature advocated by the Gila Conference of 1930. It is thought advisable not to name the black-on-brown phase until more of it is known.



Pl. 2. Native black-on-white pottery. *a, b*, bowls; *c*, olla; *d*, miscellaneous form; *e*, bowl; *f*, side-bottom sherd of a bowl; *g*, side-bottom sherd of a jar.

are usually rounded, but are sometimes flat. Figure 1 shows an olla of this ware from Lincoln. It is in the collection of Mr. and Mrs. Alves.

The paste of this ware is coarse, containing sand and some carbon compound, probably vegetable tempering. A few sherds show micaceous material also. The pottery was usually fired poorly, allowing a black core to remain. The slip is usually a brown, at times becoming a light red ocher color. The paints are soft and dull. The brush work is exceedingly poor. In some polychrome pieces the brown base can be detected very easily where the red and black should border.

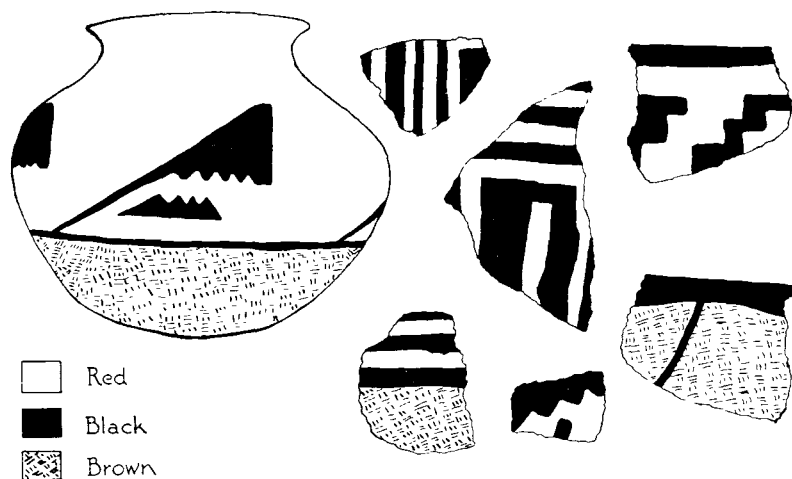


FIG. 1 Native-decorated brown ware.

Within the district the range of the polychrome ware is essentially the same as that of the native black-on-white. No sherds have been reported found very far north of the area described. No definite information concerning the decorated-brown ware in the Mimbres has been given, but the "coarse red-brown ware, black decoration" discussed in the article in *El Palacio*, 1928, may be found to be the same as the ware under discussion.

Coiled, corrugated, and crude indented wares.—These are comparatively scarce and are best treated lightly here. The corrugated pottery presents a diversity of types.

Plain wares.—Sometimes the brown and the white wares were left undecorated. One distinctive ware which occurs in abundance in the valley sites is a light brick-red colored, sand tempered, heavy ware.

Mimbres black-on-white.—Sherds are abundant in the sites of the district. The red-on-white variety occurs also. Most of the sherds are charac-

terized by a thick black core. In the southern sites geometric designs occur to the almost complete exclusion of zoomorphic ones, such as are found in goodly percentage in the highland sites. Some of the Mimbres pottery must be classified as native. At one site, on Mrs. James's farm, Mimbres black-on-white constitutes fully eighty-five percent of all decorated pottery, and the abundance of Mimbres ware at other sites is too great to be explained as intrusive.

Casas Grandes wares.—These are found in fair percentage, and are possibly to some extent native. They are represented by sherds from the excellent indented and incised ware, and from the polychrome wares. These latter are of two kinds: a black-and-red-on-white (strongly contrasted paints), and a black-and-red-on-tan (softer colors).

*Middle Gila wares.*¹²—These are represented by both Early and Late polychrome sherds.

Little Colorado wares.—The following wares represent the Little Colorado types:

1. Little Colorado black-on-red.
2. Little Colorado polychrome.¹³

These two wares, as evidenced in the vicinity of El Paso, are principally of rectilinear design with much use of hatching.

3. Early Zuñi glaze¹⁴—very few pieces.

Northern Rio Grande wares.—The Rio Grande wares represented cannot at present be referred to any one district. Therefore a short description is not out of place.

Black-on-red. There is more of the ware in the highland sites than in the others. The paste is well-fired, either a brick red throughout or a half brick red and a half grey (exterior) from excess firing. The temper is coarse sand. The slip, also a brick red, was applied only to the interior, while the exterior was roughly smoothed by rubbing with pebbles. The sherds found are of bowls only and usually show a flat rim, which has been painted. The pigment is a dull, faded black without luster. The brush work is fair, but plainly shows paint dips. Decoration is exclusively on the interior. The designs may be divided into two types: a linear-angular type, and a type

¹² Analogous with "Lower Gila" Kidder (An Introduction to the Study of Southwestern Archaeology, 105, 1924).

¹³ Black on red, interior; white on red, exterior.

¹⁴ Green glaze and white paint on interior, white paint on exterior. Affinis Hawikuh "B." For time relations and description of this ware see F. W. Hodge, Circular Kivas near Hawikuh, New Mexico. MAIHF-C 7: 1-28, 1923.

characterized by repeated rectilinear designs confined to a narrow band below the rim. (Fig. 2, lower left, shows an exotic design.)

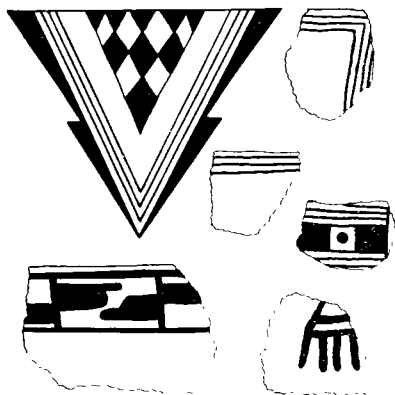


FIG. 2. Rio Grande black-on-red ware.

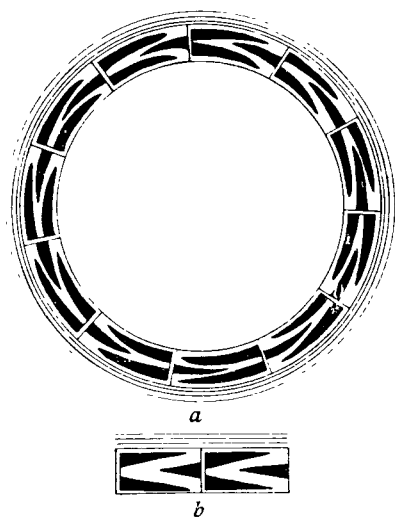


FIG. 3. Rio Grande black-on-red ware.

What seems to be a variant or related form to the above is a ware with the design in red on a lighter-colored base. This phase is found in about the same degree of abundance in all parts of the district. The paste is less coarse than the former, but the rims remain flat and painted. Decoration is in narrow linear design.

Glaze no. 1 (variation).¹⁵ Black or green glaze on a light brick orange-red background. The pottery was very well fired, and shows basaltic tempering, sparingly used. One sherd shows an exterior slip of grey. Sherds of this ware are not common in the district.

Unknown origin. A red-on-terra-cotta ware of unknown origin is found occasionally. It is heavily sand-tempered. Sherds of bowls only are found, and they show flat rims. Decoration is interior and consists of simple, broad (quarter inch) linear designs.

CONCLUSION

From the use of the preceding data the following inferences are drawn:

1. The extreme south-central part of New Mexico and the immediate vicinity of El Paso, Texas, constitutes a Pueblo ceramic district, which may be called the "El Paso district." This is characterized by two definite native wares, black-on-white and a decorated brown ware. There were apparently Mimbres settlements in the district, and possibly others of the Casas Grandes culture.

2. The district was apparently occupied by Pueblo people from a middle black-on-white time (late Pueblo 2 or early Pueblo 3)¹⁶ to the time when glaze no. 1 was being made in the northern Rio Grande sites (late Pueblo 3 or early Pueblo 4). During this time the people of the district had contact, directly or indirectly, with the people of the Mimbres valley, with the Little Colorado villages at the time when Little Colorado polychrome ware was carried over the Southwest, with the Middle Gila and Casas Grandes villages when the polychrome wares of those people were flourishing, with the villages of the Zuñi area when the earliest glaze was made, and with the northern Rio Grande sites at the time of the early black-on-red and later, at the time of glaze no. 1. It would seem that by the time of the early Zuñi glaze and the Rio Grande glaze no. 1 the population of the "El Paso" district was on a fatal decline (from the paucity of these two wares in the district, and the absence of intrusive wares of later times), and that shortly afterward the frontier of Pueblo sites retreated to the north.

TUCSON, ARIZONA

¹⁵ For description of glaze no. 1, see M. A. and A. V. Kidder, *op. cit.*, 332, 1917, and N. C. Nelson, *op. cit.*, 172, 1916.

¹⁶ A. V. Kidder, Southwestern Archaeological Conference. Science, 66, no. 1716, New York, 1927.

MELODIC COMPOSITION AND SCALE FOUNDATIONS IN PRIMITIVE MUSIC

By HELEN H. ROBERTS

CERTAIN observations consequent on varied practice in recording and analyzing primitive music of several culture areas¹ seem to me pertinent at the present time. In a study of any aspect of what we are pleased to call primitive or less developed cultures, two points of view, two avenues of approach, are possible. By means of the first we may examine the phenomena from the vantage ground of our own development. In so doing, however, the danger of comparison lies in a tendency to regard cultural phenomena other than our own as inferior, and also to read into them premises which may not exist. Having been steeped in our own culture, we find it impossible totally to divest ourselves of it in order to examine, with the apperceptive equipment necessary to complete understanding, that culture which has grown from another branch.

By following the second approach we may be well aware that exotic cultural phenomena are, like ours, to be regarded, not as abortive or defective growths, but as also living, budding endpoints of lines of development probably as long as our own. The danger of depending too heavily on

¹ The songs transcribed and studied, a little over half of which are of my own collecting, though mostly still unpublished, comprise the following

126 Northwest Coast, comprising 103 Nootka and 13 Snohomish Indian tunes.

500 Northern California, Karuk, K'oi omihu, Wailaki, Yuki, Pomo, Concow, etc.

202 Central California, mostly from around Lake Tulare.

27 Southern California, Catalinan, Luiseño, Gabrielino.

45 Apache, San Carlos, White Mountain, Mescalero.

331 Pueblo (276 from Cochiti, Tesuque, San Ildefonso, Santa Clara, and Taos 32 Picuris, 33 Acoma).

41 Miscellaneous Zuñi, Navaho, Mohave.

223 Pawnee.

33 Oglala Sioux.

127 Iroquois.

137 Copper Eskimo.

44 Tarahumara and Huichol (northern Mexico).

170 Hawaiian.

500 Jamaica negro.

27 Bahama negro.

133 Miscellaneous West Indian negro, Martinique, Trinidad, Virgin Islands, Guadeloupe.

20 Cape Verde Islands, Portuguese.

12 Miscellaneous.

Within North America north of Mexico are selections from six of the nine aboriginal culture areas—Eskimo, Northwest Coast, California, Southwest, Plains, and Eastern Woodlands.

abstractions made on this basis is that we do not know positively what were the beginnings from which various branches sprang.

Looking from the standpoint of our own well established norms at scales derived by analyses from musics for which no formulated theory is propounded by their makers, we tend to read into the derivations principles and systems like our own, particularly if the results of the derivations appear to coincide with scale systems well known elsewhere as accepted forms. On the other hand, granting that derived scales may in fact differ profoundly in source and growth from examples taken from other cultures which they may nevertheless resemble closely, the fact remains that we have no definite knowledge of what were the steps of their development.

It is not altogether possible and perhaps would not be advisable to pursue the discussions embodied in this paper from these two angles separately, but the implications involved in each line of approach should be kept in mind.

COMPARATIVE IMPORTANCE OF COMPOSITION-DESIGN AND SCALES

The study of musical art, it has seemed to me, can easily be likened to that of a decorative art such as basketry or pottery. The song as a whole corresponds to the decorated form, the larger divisions of the music to the groups of designs as they are placed on the surface. The rhythms and the structural units correspond to the design elements and their combinations into patterns, while the tonal content of songs corresponds to the colors used. To dismiss as irrelevant and rudimentary the divisions of the design field, the arrangements of design units into patterns and the elements as such, confining the attention solely to the materials and pigments, would be a grave over-simplification in a comprehensive study of any decorative art. That of even the most primitive folk is not as free from intricacy as it appears to be superficially, and always repays detailed study. Often it is chiefly through fashions of stylistic treatment that cultural differences and analogies may be discovered. The colors and material used are likewise important and offer a wide range, but variation such as of shades of yellows, browns, blacks, reds, blues, greens, is not perhaps so important for psychology and anthropology, since they may be caused by all sorts of accidental natural factors over which the artists may not be expected to have learned control, as is the choice of groups of these colors in varying shades, and their combination into design. For it is the *playing* with these colors that counts in investigations of an anthropological nature, made from the standpoint of the psychology of primitive musical aesthetics.

It is therefore important in a study of musical art to make as detailed

investigations of composition structure or design in combining melodic elements of varying sorts, as is commonly made of the minute variations in tones used and their assemblage into scales. The minute tone variations are somewhat like shades of color, often accidental and inadvertent, and more properly the subject of investigation by physiological psychologists. Only in highly sophisticated art may it be expected that deliberate play would occur with these very delicate differences, although, since the gradation between cruder and finished art is continuous, it is necessary to be on the watch for signs of refinement. Meters, rhythms, forms and styles in musical composition are also worthy of careful examination. While it is true that simple, more obvious patterns are encountered over and over among peoples of many unrelated culture types, it is equally true that minute stylistic features of composition and rendition are found, even in cruder songs, manifesting themselves as distinguishing criteria of the products of various cultures, often when the choice of pitches still seems to be somewhat chaotic. Structural features are not necessarily, nor even frequently, entirely subordinated to the structure of the song texts, and may repay study by revealing complexities quite independent of them. If they are subordinated to the structure of the poetic or text forms, then rightfully this phase of the subject should be investigated by the music student, since it has an important bearing on his final generalizations. A great many writers on primitive music, not only in the past, but even at the present time, tend to dismiss or completely overlook that side of the study of primitive music concerned most prominently with the art impulses of the song makers—the designs achieved with chosen materials—confining themselves chiefly to discussions of those materials, i.e., the scales, which in the nature of the case tell less than half the story.

DERIVED VERSUS THEORETICAL SCALES

Another common procedure is to regard such scales as *are* derived from tonal analyses of the songs, as equivalent to theoretical scales worked out with minute care and experimentation by more advanced peoples, with the aid of musical instruments of fixed or fixable pitches, to which, as standards, not only other instruments are tuned but in actual or theoretical conformity with which songs are composed and sung.² This is equivalent to making studies of the amount of pigment entering into dyes used for basketry materials, of botanical specimens, or of the composition of minerals used for pigments in pottery, of which the users are only partly conscious.

² See Charles K. Wead, Contributions to the History of Musical Scales, SI-AR, 421-41, 1902, for an able discussion of such theoretical scales.

whereas more advanced folk prepare the colors by carefully worked out formulae. We have no right to assign any particular scale system to the music of peoples possessing only vocal music, or at best only rudimentary instruments of fluctuating or limited pitch development, unless the derived scales of all the songs are alike, or coincide with the instrumental scales and do not transcend them, or without proof from an intimate knowledge of the music that a given scale is accepted by its makers as a norm. It would be equivalent to placing their basketry colors obtained by more or less simple, direct use of what they could easily procure, on a footing with a color scale made up by a Winsor Newton paint factory or a German aniline dye house, from carefully calculated combinations of pigments, jealously guarded as the result of patient research, and standardized by formulae involving the most careful weights and measures. In fact, the conception of scales, as such, is something we are reading into primitive music, where they do not exist. The word "scale" is a convenient term with which to designate the tonal material present in a given song or songs, in its complete range from highest to lowest pitches, but the derived scales are of *our* making, and the conception is ours. If some few nations of antiquity achieved a musical philosophy and scale ideas similar to ours, this is no reason to infer that such concepts govern all musical thinking and musical evolution.

PENTATONIC SCALES

One misconception relevant to scales, on the basis of which many inferences have been made, has become so widespread, through uncritical acceptance, that it seems now to demand special attention. There are those who would have us believe that the "pentatonic" scale is the primitive scale *par excellence*. "Pentatonic" has become a word to conjure with, much as certain people like to remark that an exotic music has a minor sound merely because the melodies are obviously not to be fitted into the modern European major scales to which we are all accustomed, although those who discuss pentatonics have not always the excuse of lack of musical training evinced by the naive use of the term minor.³ Most writers who use the in-

³ This does not mean, as one writer has contended (Herzog, *in* JAFIL 39, 220), that primitive melodies may not be termed major or minor except in cases where European influence is obvious. To characterize exotic music as major or minor from our point of view does not necessarily imply that these peoples so regard it, or that the music can thus be aligned with our major and minor scales. The descriptive terms major and minor, as used by musicians quite apart from any connotation of a distinct scale, like many other musical terms, have long since transcended applicability to Europeanized music only. As well deny the use of the words scale, tonality, or any other term owing its origin to a particular music history, in describing an ex-

clusive term "pentatonic" have in mind the particular pentatonic scale as generally attributed to the Scotch, among other nations. This may be represented by the pitches *c, d, e, g, a*, or in the Tonic-sol-fa system (which in America, at least, is taken to represent interval relationships only, and not actual pitches, as it seems to do in France),⁴ by *do, re, mi, sol, la*. In this scale the ground tone or resting tone, if not tonic in our sense, is *do*.

Five modes of what is popularly called the Pentatonic scale are recognized in classical European music in which each tone in turn becomes the tonic or resting tone. (The French recognize ten, in five pairs, authentic and plagal.) Theoretically considered, from the standpoint of our musical history, these five modes are but different phases of one and the same scale, hence the term Pentatonic is applied to all, not so much meaning merely five-toned in this case, as certain kinds of five-toned scales, hereafter designated by the capital letter *P* in distinction to other pentatonic scales, designated with a small letter *p*, of which there are many kinds possible of construction and actually found in use among various peoples outside of Europe.

Some writers have asserted that the Pentatonic scale is employed by the Chinese, Russians, Scotch, Japanese, etc., as if it were their only or chief scale, without making note of distinctions in mode in such use as it does enjoy among them.

Before taking up the question of mode it is instructive to ascertain

otic music to European and American readers. His contention that our conceptions of major and minor are based solely on the third above the tonic is unwarranted, as is his statement that thirds are so variable that they may never be taken as criteria. The descriptive terms "major" or "minor" may be applied to any tunes, it seems to me, in which intervals predominate which correspond to what we know as major or minor intervals, particularly those intervals which have, as one boundary, the ground tone or its fifth.

Thinking I had made myself clear on this point, I unfortunately so characterized the Copper Eskimo Songs, vol. 14 of the Canadian Arctic Expedition of 1913-18, Southern Party, Ottawa, 1925, and using the word *tonality* as opposed to *key*, with this very thought in mind, elicited criticisms from two foreign reviewers. Although, for reasons that need not be given here, I was not able to complete an exhaustive treatise of the scales involved in this music, nothing was further from my thought than to assign them to either our major or minor scales, as I tried to indicate by forming other scale groups and by my general remarks. Even my statement that by combining all the scales occurring in the songs into a sort of super-scale, which is the way some writers derive a general scale for primitive groups, made it apparent that all the tones of the major diatonic scale, as we know it, were present, was misconstrued by one reviewer as an attempt to prove that the major scale was the scale of Eskimo music.

⁴ M. Béclard d'Harcourt, *Le système pentaphone dans les chants des Copper-Eskimos*, ICA 2: 15-22, 1928.

whether the first premise is justifiable. On the question of the Scotch Pentatonic scale it is interesting to quote a Scotch musical authority:⁵

A general idea seems to prevail that Scottish music can be played upon the five black digitals of the pianoforte, representing what is popularly known as the Caledonian scale, but anyone who will take the trouble to examine Scottish music will find that not more than a twentieth part of our old melodies are pentatonic, or constructed upon this form of the scale.

Marjory Kennedy-Fraser and Kenneth McCloud, in *Songs of the Hebrides*,⁶ a collection of one hundred and fifty Gaelic songs, say:

... whereas, in the European harmonic music of the last three centuries, the scale varieties ... have been reduced to two (the so-called major and minor), the Scoto-Celtic melodic music, on the contrary, still makes use of at least twelve ... In many Scots airs we find a hybrid form of this scale [Pentatonic and various modes], a form in which there is but one gap to the octave, i.e., in some the fourth alone is omitted, in others the seventh. ... These examples of partially gapped scales will serve to introduce us to the genuine pentatonic forms which may be said to constitute the tonal basis of perhaps a third of all the airs native to the isles.

This estimate is considerably higher than that of Colin Brown, but certainly does not agree with such statements as that the Pentatonic scale is typical of Scotch music.

A comparable situation apparently is characteristic of Russian music. Anyone examining the tunes will find, not prevailing Pentatonic melodies, but, on the contrary, that probably only a very small percentage of Russian peasant songs are based on any kind of a pentatonic scale. Out of forty songs of the people collected by M. Balakirew⁷ and considered by Russians to be a truly representative collection, only one was found to be in a Pentatonic scale, that is, one of the five modes of the classical Pentatonic. Four others contained only five tones, but these were on contiguous degrees. The rest were in hexatonic and heptatonic scales, the great majority being hexatonic, but with a preponderance of minor intervals stressed in the melodies, particularly in relation to the ground tone.

Of one hundred and fifty Russian Folk Songs collected by Nikolai Andreevitch Rimskii-Korsakov,⁸ an examination reveals that only twenty-

⁵ Colin Brown, *The Thistle*, p. viii (Glasgow, Dec. 1883). Mr. Brown was then Euing Lecturer on the Science, Theory and History of Music, Anderson's College, Glasgow.

⁶ I, xxviii, xxx (London, 1922).

⁷ M. Balakirew, *Recueil de chansons populaires russes*. Edition M. P. Belaieff, 1895. I am assured that this is a second edition, the first appeared in 1867.

⁸ Collected about 1877, representing the songs known popularly in Russia about a century ago, and published in Petersburg, 1925, probably as a later edition of the original.

two are limited to five tones and of these only one song is based on the Pentatonic scale. The others are mostly five-toned scales on contiguous degrees. Five could be represented, as to interval relationships, by the syllables *la, sol, fa, mi, re*; five by *re, do, ti, la, sol*; three by *mi, re, do, ti, la*, three by *sol, fa, mi, re, do*. The rest contain gaps greater than a step. Two may be represented by *do, la, sol, fa, mi*; one by *fa, mi, re, do, sol*; one by *do, ti, la, fi, mi*; and one by *fa, mi, re, do, la*.

Mme. Eugénie Lineff,⁹ summing up the scale foundations of twenty-three songs, classes nine as being in a scale which might be described as the same as the Hypodorian of the ancient Greeks, three as in the Locrian scale; five as Lydian; one each as Lydian-Locrian, Lydian-Hypodorian and Ionian; and two as Phrygian.

By far the greater number of Russian songs of the folk are in some form of hexatonic scale. So much against the theory that Russian and Scotch songs are Pentatonic. I have not examined the Chinese and others.

As to such Pentatonic scales as have been developed by different nations, after all, as will come out more clearly later, a kind of law of limitation of possibilities is at work, which makes for seeming uniformity. But these Pentatonic scales are directly traceable to the manufacture of instruments and to theories developed from considerable experimentation, where the tone productions can be more or less exactly determined.

MODES AND POSITIONS IN PENTATONIC SCALES

Even were it true that some mode or other of the Pentatonic scale were the basis of the music of many different nations, the choice of mode is of paramount importance. Some people may use only one of the five modes, others may employ several. The choice of mode may be a very characteristic feature indicating the probable history of the formation of the scale, and with a great influence on the resulting tone color of the music.

When the Scotch use Pentatonic scales they seem to employ chiefly Modes I and III, major in character to our ears at least, because of the major third and sixth intervals above the tonic or ground tone and an emphasis on major triads. The inference from the remarks of Mrs. Kennedy-Fraser and Kenneth McCloud is that the most popular tunes are major in tonality, or feeling, if that word seems preferable. Of twenty-four tunes presented in an article on Burns and Scottish Folk Song,¹⁰ comprising some

⁹ *The Peasant Songs of Great Russia*, pp. xlii and xliii Imperial Academy of Science, St. Petersburg, 1905.

¹⁰ G. E. H. Abraham, *Burns and Scottish Folk Song*, Music and Letters, pp. 71-84, 1923.

of the oldest Scotch airs, three only were distinctly minor in feeling and one of these was attributed to an original Irish source.

Even a cursory examination of Russian music will reveal the fact that its feeling is predominantly minor, and this generalization was vouchsafed to me quite independently by a Russian singer whose knowledge of Russian folk music is profound. It is confirmed by Mme. Lineff's study.¹¹ She says that of twenty-three songs in her collection fourteen are minor in tonality. That major or minor tonalities (not *keys*) are not invariable characteristics of the Scotch and Russian tunes respectively, does not invalidate the importance of the general distinction.

While in European classical musical theory all five modes were recognized as different phases of the Pentatonic scale, this is not necessarily true of the music of primitive peoples who happen to employ the Pentatonic in some of their melodies. Moreover, in primitive music particularly, although possibly important also in more developed national musics, the situation of the ground tone of any given mode in relation to the range of tones—as in the middle, at the bottom, or at the top (partly the French plagal and authentic modes)—is of the greatest importance in melody building, in the creation of tonal pattern and effect, in influencing the size of melodic curves and to some extent their trend, in the impression created of more or less level monotony where the scales are limited in range, and so on. This point has been too little stressed in the study of primitive music. The term "position" as distinct from "mode" seems appropriate to indicate the situation of the ground tone in regard to the others governing the intervals of a given mode. It will readily be seen that for any of the five modes there are five possible positions of the ground tone.

The fact that certain so-called primitive people possess pan-pipes and flutes capable of producing a pentatonic scale, such as the "Scotch" Pentatonic, has led some authors to ascribe to these peoples the Pentatonic as a fundamental scale, they have even gone so far as to propose such a scale for the American continents, if not exclusively, at least as the one to which all songs should be referred first, in order of try-outs.¹² Although they admit that along with pan-pipes and flutes which produce some mode of the Pentatonic scale, others are to be found, even in the same groups, which do not, these instruments are passed lightly over as being in a manner defective and not to be taken as significant. It seems also to have been over-

¹¹ *Op. cit.*, xliii.

¹² Bécclard d'Harcourt, *op. cit.*, 21, and *La Musique des Incas et ses Survivances*, Paris 1925, *passim*.

looked that in windblown instruments considerable change in pitches may be obtained by varying embouchure and "cross-fingerings." It might be argued that this fact alone could superficially be utilized to support the theory, if the tones of the Pentatonic might thereby be procured on "defective" instruments. Even if this could be proved, however, the same factor might make for tone variation on the "perfect" instruments.

North American Indians do not possess pan-pipes. Even those South American peoples who did or now possess them have never been shown to have established with their aid any pentatonic scale as a constant, theoretical norm. Flutes have varying numbers of holes. A most interesting chapter might be written in the history of musical and other instruments on the significant part played by the structure of the hand in their development. Wead has shown how much the placing and number of holes and stops on flutes and similar instruments has been influenced by the number of fingers free to play them,¹³ not being required to hold the instruments in position and not too short, too awkwardly situated or activated to reach them. This is one explanation why primitive flutes and similar instruments so frequently have four, five and six holes. The whole question is one of great complexity, not to be solved by any single answer. Sacred tribal numbers, accidental combinations and what not, have lain behind the development of forms finally fixed upon as basic. But even among primitive tribes where instruments such as flutes capable of producing several tones are common, it is a matter of repeated observation that the instruments vary considerably from specimen to specimen in actual scales achieved.¹⁴

PRIMITIVE SCALES

The question of assigning "the pentatonic system,"¹⁵ as fundamentally primitive, to peoples lacking theory, as well as a variety of instruments accurately made, involves consideration of many points. Derived scales (constructed by the student from tonal analyses of songs of people in such a stage of culture) are apt to be numerous, even in the music of a single group, when the continual support of instruments of fixed pitch all tuned to one scale is absent. They vary not only in the number of tones utilized

¹³ *Op. cit.* See also Kathleen Schlesinger, *Encyclopedia Britannica*, 11th ed., articles on the bassoon and on flutes. F.C.L.

¹⁴ This does not mean that there are no cases of attempts to tune instruments to a norm in primitive groups. Faulty holes in flutes are sometimes plugged. Von Hornbostel claimed (*Ueber ein akustisches Kriterium für Kulturzusammenhänge*, *ZE* 43: 601-615, 1911, that the pan-pipes from Java to Brazil showed signs of being constructed on one design. But in general, great variation occurs in primitive instruments.

¹⁵ M. Béclard d'Harcourt, *Le système pentaphone dans les chants des Copper Eskimos*.

in different songs, but in the interval relationships of the tones.¹⁶ Therefore, even if justifiable—a question presently to be discussed—it is generally impossible to align more than comparatively few derived scales with one more comprehensive, as represented in some songs. This is particularly the case if certain pitches, somewhat “deflected” from those more often occurring in a given melodic situation, are also taken into account. It is true that these “deflected” pitches may be analyzed, each in relation to the situation in which it occurs, and that they are sometimes obviously, if not actually proved to be, inadvertent—hence not significant from the point of view of scale structure. They may be the result of influences difficult to identify or measure, such as physiological or psychological conditions, the “pull” of language intonations, etc.¹⁷ Persistent appearance of such “deflected” tones, however, may carry deeper meaning. It may indicate that the intonation “pulls” of different words with which the tone is associated are similar, or that the singer has a tendency to acuate or attenuate melodic curves;¹⁸ that he has a peculiar motor difficulty in producing a given interval, or merely has established a habit in singing the particular song, perhaps having learned it from someone who so rendered it. Lastly, such a tone may be intentional.¹⁹ It is not wise to assign this reason, however, until the others have been investigated, and not even then, unless several renditions of the same song by the same and by different singers, carry the same pitches in the same situations.

MAJOR, MINOR AND NEUTRAL THIRDS

A recent book²⁰ accounts for a number of fluctuating tones around a

¹⁶ For that matter, even in our own modern music, there are many more scales in use than our theory provides. Thus we utilize the whole-toned scale, pentatonic scales, a diatonic major, three varieties of minor, an integrated major-minor, several chromatic scales, most of the Gregorian modes and the “Hungarian scale.” Thus practice outruns theory. Our major and minor scales, the creation of the “Neapolitan School,” about 1650 A.D., were enlarged to probably their fullest harmonic inclusiveness by Richard Wagner and now show signs of disintegration. I am indebted to my friend, Mr. F. C. Lathrop, for the suggestion of including this comparison from the field of our modern music.

¹⁷ Of course “deflected” tones occur in all vocal music, primitive and sophisticated. They are discussed in some Chinese and other treatises and before the time of Guido d’Arezzo, quarter tones were common in European music. That our theory no longer gives them a place does not mean, however, that they are not used. F.C.L.

¹⁸ Helen H. Roberts, *Variation in Melodic Rendition as an Indicator of Emotion*, Psychological Review, 34: 463-471, 1927.

¹⁹ Neutral thirds often occur unintentionally in our singing. In modern jazz they are used frequently with perhaps more sophistication and purpose. F.C.L.

²⁰ Milton Metfessel, *Phonophotography in Folk Music*, p. 146. University of North Carolina Press, 1928.

major third, and particularly the occasional presence of the so-called "neutral third" above a fundamental, as an evidence of *intent* to sing the "neutral third," on the part of the negro singers. Perhaps this is so. American Indian music contains examples of its consistent appearance. As an argument to explain what I considered a possibly deliberate play between minor and major thirds in a number of Copper Eskimo songs, a reviewer²¹ brings forward the intent to employ the neutral third.

The major and minor thirds referred to in this case, however, were quite well sung and the difference between them was distinct. Moreover, their occurrence suggested that they were pitted against one another, by way of contrast, and for effect, and were not hit-or-miss attempts at singing neutral thirds.²² Melodic effects such as these are quite within the capacity of primitive people to appreciate. The term "neutral third" has become somewhat like "Pentatonic" in its usage—a favorite point of argument for the sake of theory. It is also a convenient term with which to dispose of troublesome thirds which fluctuate between major and minor for other reasons than as an attempt to split exactly the perfect fifth,²³ which Mr. Herzog gives as the origin of its use. True, it lies in the middle of the perfect fifth interval, but as a matter of fact, it can have originated in several ways, least probable of which would be the one designated. Unfortunately, as Mr. Herzog himself states in the same paragraph, thirds are the most variable intervals, not merely in primitive music (as he contends), but in our own vocal music, and cannot be so easily disposed of as he imagines. Singers who have every advantage of modern training frequently experience difficulty in pitching the upper tone of a true major third interval, although minor thirds do not seem to give as much trouble. Most vocal teachers, choir directors, and public school music instructors have probably observed this phenomenon in their work, as I have, not only among white people, but among primitive people of various races. The observation finds abundant confirmation.²⁴

²¹ George Herzog, in JAFI 39: 218-225, 1928.

²² See the Eskimo Collection. To name only a few, No. 66, a^{\sharp} and a^{\flat} between b and f^{\sharp} , No. 83, e^{\flat} and e^{\sharp} with g ; No. 89, d^{\flat} and d^{\sharp} in connection with b^{\flat} ; No. 91, a^{\flat} and a^{\sharp} with c ; No. 102, d^{\sharp} and d^{\flat} with b^{\flat} .

²³ *Op. cit.*, 220.

²⁴ Thus A. J. Ellis, in his *On the Basis of Music*, said as long ago as 1877: "... it is notorious that singers have considerable difficulty in striking a true major third (as this interval is called) and can easily put up with some change in it so far as melody is concerned" (p. 22).

A psychology test conducted by F. A. Stevens and W. R. Miles, described in *The First Vocal Vibrations in the Attack in Singing*, Psychological Monographs 39, no. 2, 1928, Univer-

The reason for this apparently common difficulty in pitching a true major third is not clear, and should be investigated by psychologists and physiologists. Among European peoples the tempered scale of the modern pianoforte may be in part an answer, in that as an accompanying device, it tends to distort true intervals, while its continued use may affect judgment. But it is not the whole answer, since the singers' distortions are not always in the directions to be expected. Certain psychologists used to assert that if a true mental image is formed of the tone to be sung, this materially assists in its production. My personal experience confirms the position taken by the opponents of this idea and has shown that even with a clear image, production often falls short of what was intended, more easily with thirds than with fifths or fourths.²⁵ Possibly the voice, easily affected, is an important factor. It may be physiologically easier to produce tones the vibration numbers of which, when the tones stand in melodic succession, are expressed by the simpler ratios.

A partial explanation of the difficulty as felt by the European singers, at least, may also be historical. As suggested by Moore's studies²⁶ in another connection, it is only comparatively recently (for the last three hundred years) that the third has been considered a possible consonant interval in a harmonic sense. A long history of singing parts in octaves, fifths, and fourths preceded the introduction of thirds, which were originally regarded as offensive to the ear. Evidently it has required considerable time for this interval to become generally accepted as "smooth." Moore has shown how the judgment of the consonant aspect of intervals is based on experience. But experience has been ordered by the most easily assimilable intervals, i.e., those composed of tones the vibration numbers of which stand to one

sity of Iowa Studies in Psychology, 12: 200, ff., also offers proof. On page 218 the authors state: "It is generally recognized that the 'fifth' is easier to sing than the 'third'. Our results indicate that the attack of the 'third' is with less certainty." They used major thirds.

C. S. Myers also draws attention to this point in *The Ethnological Study of Music*, p. 248 (*Anthropological Essays in honor of L. B. Tylor*, pp. 235-253).

²⁵ Failure to produce what was expected increases with the length of interval succeeding previous performance. Thus Stevens and Miles, *op. cit.*, 203, state: "The immediacy of previous vocalization experience, at least for most people, is very important in making them certain in their attack . . . The obverse of this is seen when a person goes for several hours without vocalization, he is then usually very uncertain, and much surprised at his own next utterance by the sound and pitch of his voice." Possibly in producing certain intervals like thirds satisfactorily, more is required than indiscriminate vocalization. It may be that certain intervals are better preparatory steps in producing thirds than others.

²⁶ Henry Thomas Moore, *The Genetic Aspect of Consonance and Dissonance*, Psychological Monographs, 17: 1-68, 1914.

another in the simplest ratios, numerically.²⁷ Just as it has required painfully long ages for man to reach his present state of civilization, by a process extremely slow at first, but gathering momentum with the passage of time, so it took long to enjoy tonal relationships other than the simplest. But with the advent of the thirds into the accepted circle of agreeable intervals,²⁸ the use and appreciation of other intervals grows apace. In the last fifty years all sorts of intervals that formerly would have been condemned as outrageous are now heard, both harmonically and melodically, with toleration and even enjoyment. It is quite likely that our long harmonic history influenced the contemporary melody and that intervals heard often in harmony are thereby rendered easier in melody. Perhaps the awkward thirds may be partly accounted for among singers of today in our society as not even now wholly assimilated.

Moore has also shown that once intervals are judged completely consonant, i.e., "smooth," they tend to become uninteresting at about the same time they become entirely satisfying. He has pointed out that after octaves—probably the first *harmonic* intervals accepted with complete pleasure by the Greeks—perfect fifths and fourths were included as likewise consonant intervals, but that thirds and sixths were excluded. At one time not so remote in our own music history, fifths and fourths were considered disagreeable harmonic intervals, while the acceptance of thirds and sixths is even more recent. Moore contends that if the undoubted advance of thirds and sixths into our own conception of consonant intervals has occurred, the presumption of a similar earlier advance of fifths and fourths among ourselves and the Greeks is not unreasonable.

²⁷ As W. Van Dyke Bingham says in *Studies in Melody*, Psychological Monographs, 12: 87 "But although the basis for consonance inheres in the inborn structure of the nervous system and the acoustical properties of vibrating bodies, nevertheless it is a commonplace of musical history and observation that these same native tendencies are subject to tremendous modification in the course of experience."

²⁸ Whether the term agreeable is used in a consonant (i.e., harmonic) or a melodic sense, does not really matter in this connection. Another factor is involved in the "agreeableness" of tonal combinations than that of mere beats. Why is it that not only among ourselves, whose harmonic background must always be acknowledged and taken into account, but among peoples who have never known harmony, the songs in which the melody follows more or less closely the line of tonal relationship, particularly of the more simple vibration ratios and chords, are better sung and more easily and longer remembered by the folk than those tunes which we would say have little or no melody—i.e., the chief tones of which are not "tied in" with one another? It is not a matter of small intervals, for fifths, sixths, octaves, cannot be called small, yet abound in the more appealing tunes. It goes back again to experience in sound—which in turn has been determined by the "inborn structure of the nervous system and the acoustical properties of vibrating bodies."

However much influence harmony may have had on the skeleton structures of classical melody curves, the development of melodic intervals in monophonic music must have taken a somewhat different course. The monotone, with or without definitely pitched deflections, probably preceded all else. The most rudimentary songs to be found now, from the point of melody as well as of structure, are almost monotones. Some ancient Hawaiian chants are good examples, having scarcely a change from one tone, but these are possibly specialized forms. It is hard to say. Other, more developed, but quite simple songs structurally, stress the intervals of the fifth and fourth below the fundamental, with only occasional and ephemeral tones fluctuating about these. Still others introduce additional tones and are obviously more modern in type.²⁹ Some Indian songs, or those sung by people whose music is more or less undeveloped, have scarcely more than two or three tones, generally a fundamental and its fourth or fifth, in the octave above or below. The order of use of these intervals in all probability has not been the same among different peoples. Some appear to have preferred fourths, others fifths. Great numbers of songs contain these intervals, while few octaves appear. Thus to some extent melodic growth seems to have had roughly a similar career to that of harmony, i.e., the intervals most frequently used are simplest in vibration ratios, and these appear to be comparatively stable, whereas the less simple ones are not.

The comparatively infrequent appearance of the octave interval is interesting. It may mean either of two things: (1) that being the smoothest, most nearly consonant interval it lapsed to second place very early, in favor of fifths and fourths, or (2) that being large it was not so much in demand, particularly because the close relation of the octave to the fundamental offered little that was interesting in way of contrast. The octave was used very early in shouting and calling, but as this very use implies, it involves a certain degree of effort. Probably an appreciation of octave *levels* came early,—it may be through the realization of the difference between men's and women's voices (time-honored example), although to many ears this difference is not readily apparent, being laid to quality or timbre. Numerous songs of primitive peoples contain melodic sequences of less than octave range, carried out on different octave levels, but this is another problem, psychologically, from that of singing octave intervals. The monotone, or prime, seems to have usurped the place of the octave as the earlier

²⁹ For the tonal contents of various Hawaiian chants see H. H. Roberts, *Ancient Hawaiian Music*, B. P. Bishop Museum, Bull. 29: 313-316, 1925.

important melodic development, to which fifths, fourths, and octaves were added in no special order, perhaps, as early stable intervals. Doubtless in all primitive melodic music, tones of less stable value than the fifths, fourths, and octaves have appeared since the beginning. Quite possibly thirds came into play as enjoyable melodic intervals much earlier in some musics than their whole-hearted acceptance in European song, after it felt the chilling touch of church harmony, which profoundly influenced it for so long. May it not be that the Eskimo play with major and minor thirds represents a growing recognition of these intervals as agreeable, rather than a stereotyped attempt to divide equally the interval of the perfect fifth? Would not such a division be theoretically and practically rather difficult for people without written music, specially tuned instruments, and, as far as we know, theory? At any rate, the neutral third as an ideal is not the entire answer.

The Method of Deriving Scales

The question of thirds has led to a much longer digression than should have occurred at this point. It will be necessary to revert to scale tones further on. In arranging derived scales from the songs of any people lacking recognized musical theory, certain procedures are essential to clear concepts and trustworthy analogies. It has seemed best to abandon the method of representing scales by musical notes of equal value.³⁰ Some tones occur much more frequently than others, not only in any given song, but throughout a number, in more or less fixed relation to a tone appearing to assume the function of ground tone. I prefer this term to "tonic" as used in European music. The detection of such a tone in many primitive songs is usually a simple matter. In frequency of appearance and actual time consumed it may outclass all the other tones combined, or even double their total. In other cases the honors are not so conspicuously bestowed. It may even share them with some other tone. But on the whole the cases are few where considerations of weight, plus strategic occurrence as a beginning and ending pitch, a resting point in melodic curves and the like, do not betray its function. My technique of weighting is as follows:

By counting the number of units of meter given over to each pitch in a song and assigning arbitrarily a ranking value of 100% frequency to that pitch having the greatest number, I write it as a whole note on its proper

³⁰ This (and the plan of weighting tones) was suggested to me by Dr. Otto Kinkeldey, formerly music librarian of the New York Public Library, but just too late to be applied in the *Songs of the Copper Eskimo*, written in 1921, although it did not appear until four years later. As a method, it has been used by me since 1921. I am aware that von Hornbostel has developed a similar scheme.

staff degree, as the first essential in representing the scale of the song. Ascertaining the number of beats consumed on every other pitch, their frequency percentage is calculated in terms of the total number of beats of the principal note. By giving each pitch a musical note value roughly corresponding to its frequency percentage in relation to the principal tone, it is possible to obtain an approximate idea of the relative prominence of the tones, which is sufficient. This matter of relative prominence controls to a great extent the tonal color of songs which, while having the same pitches and ground tone, nevertheless create entirely different tonal effects. Moreover, weighting the various tones in this manner reveals at once the structural skeleton scale to which are appended other tones which may be so ephemeral as to barely enter the picture. It obviously gives a wrong conception of the tonal content of a song (or of its tone color, so to speak) to rank a tone occurring only once in a song, and then only for a fraction of a beat, with one occupying, for instance, 193 whole beats.

Transposing the ground tones of all the songs to a single pitch, such as c, for simplicity in reading and comparing, and transposing without changing their intervallic value all the other scale tones to the proper pitches, no matter what chromatic signs may be required to represent them, one is able to compare readily not only the skeleton scales but the more ephemeral tones. It is a question what may be considered the dividing line of value between structural and ephemeral scale tones. Taking the ground tone as a whole note, other scale tones ranking less than a sixteenth in value may be regarded as ephemeral. Even disregarding these, few scales in any collection of 100 songs taken from primitive groups are exactly the same, although there may be a number of rough approximations. Among others that commonly appear are various pentatonic scales.

Genetics of Scales

It may be argued that, because primitive peoples whose instruments are practically valueless from the scale standpoint nevertheless almost universally have something approaching Pentatonic scales in such high proportion in their music, (a point to be taken up later) this fact is significant, and indicates a groping toward the Pentatonic of historical European use. Probably no peoples who sing fail to realize in some way that octave relationships are more nearly identical than fifths or fourths, for instance. In fact, octaves of tones are universally regarded as the same, only higher or lower.³¹ Thus the number of possibilities of intrinsically different tones

³¹ Helmholtz, *Sensations of Tone*, p. 254. Ellis translation. Also Moore, *op. cit.*, particularly pp. 21-39.

lies within an octave compass. While the octave may theoretically be split into an indefinite number of tones, the old Chinese having achieved as many as sixty-four which were demonstrable by minutely tuned instruments,³² and these might all be readily distinguished by the average listener if heard in a middle register,³³ they probably could hardly be consistently produced by the average individual over and over in melodic singing progressing from one to another successively and by skips, with or without instrumental props. My own experience with primitive peoples of various races,—Negro, Polynesian, Indian,—has shown that it would be extremely unlikely that minute tone differences would even be heard, not because of any inherent inability, for in directions in which their interest and welfare lie the hearing of such people is as acute as any, but because their attention has never been directed toward fine distinctions in scale tones, except sporadically in the attempt to copy an admired instrument exactly. They hear delicate nuances of intonation in speech, especially where tone in language has become important to meaning through certain trends of development. They distinguish minute forest sounds where differences convey so much that is vital to them. Hawaiians, having developed by means now obscure, a stylistic, rather pronounced vibrato singing, where the fluctuations cover a quarter tone or more,³⁴ distinguish it from a steadier tone, as an artistic accomplishment. But these are all in the line of specially developed interests, ample evidence for the existence of which is to be had from various sources.

In the matter of meticulousness in producing minute melodic intervals in songs, the most primitive (or mentally heedless and lazy) folk may be indifferent to the extent of a semitone, even with more consonant intervals. However, the term "primitive" is another that is constantly misused. Probably no two groups of "uncivilized" peoples are at exactly the same stage of "primitiveness";—with some, like the Eskimo, it is clear from their lovely melodies that the appreciation of tonal color value is much greater than with most North American Indians or Hawaiians. To attempt to relegate them³⁵ to a much lower musical level is doing them an injustice.

Much, but by no means all, primitive music is sung in choruses, as in dance and ceremonial accompaniment. The chances of accurate group

³² M. Courant, *Essai historique classique des Chinois*, in Lavignac, *Encyclopédie de la musique et dictionnaire du conservatoire*, pp. 78-241, 1913-14.

³³ As at least indicated by the Seashore Laboratory tests for pitch discrimination, for which see various numbers of the *Psychological Monographs*, such as 69, 108, and 140.

³⁴ Roberts, *Ancient Hawaiian Music*, pp. 120-141.

³⁵ Herzog, *op. cit.*, 220-221.

vocal production of minute intervals under such conditions without the aid of instruments, or even with it, are reduced to practically nothing, due to individual differences in ability to hear and sing, in which old age, physical temporary disabilities, and so on, are contributory factors.³⁶ Miles³⁷ has shown, in a study of white singers, two main tendencies to which primitive singing offers striking confirmation, if general observation may be trusted. He says:

The human voice is about equally accurate, in terms of vibration, at all points well within its range, therefore, the high tones are sung relatively (per cent) more exactly than those which are low . . . Measured in terms of average error, the voice is less accurate when its volume is large.

Much chorus singing among primitive people is done in the open and the voices are loud and comparatively uncontrolled. The emotional conditions under which the singing is done tend to make both men and women scream, and force their voices. Anyone who has heard Indians sing in chorus realizes that many pitches are blurred, particularly when it is a case of attempting more awkward intervals. Although perhaps women do not sing in unnaturally low registers in many tribes, it happens in my observation that surprisingly often women have coarse voices, almost man-like in quality. Among men, who have far out-numbered women as my informants, it is frequently necessary to ask individual singers to pitch their voices high enough so that the average field phonograph will register them. This is not due to natural range, but to habit in solo singing. People who sing to themselves and do not care to attract attention, usually employ forced low registers. Likewise, informants singing behind closed doors, desirous of avoiding subsequent comment from suspicious and disapproving neighbors, can hardly be made to raise their voices to suitable levels. Even when taken miles out of earshot, it is difficult to put them at sufficient ease to secure natural tones. Not so with the Eskimo, who had no precedents of fear, like the Indians, and who sang with naturally beautiful, untrammelled tones.

Considerable refinement of singing is required to produce accurately the chromatic scale of modern Europe, containing twelve tones within the octave. This does not by any means represent the most refined interval

³⁶ The old pre-Platonic Athenian aristocrats are said to have practiced assiduously for half a lifetime of childhood and youth on quarter tones in order to be able to appreciate and sing them. Aristoxenos laments that fashions in education had changed and the older enharmonic was no longer current in the repertoire of the amateurs — F. C. L.

³⁷ Walter R. Miles, *Accuracy of Voice in Simple Pitch Singing*, Psychological Monographs, 16: 65, 1914.

singing possible, it is true. Witness certain Greek and Hindu scales. But even these, it is said, are more matters of theory than actual practice, larger intervals than those of contiguous scale tones being commonly chosen in song. Generally speaking, a semitone progression in singing is regarded by the average performer of considerable training in modern Europe as a small step from any given note. It would therefore be expected that a scale of some five, six, or seven tones within an octave would represent a mean between absolute crudity or simplicity of octave division, and reasonably fine distinctions such as semitones or even quarter-tones. Thus one would expect to find in primitive music in general not merely some derived scales of only two or three tones, but a comparatively large number containing five, six, or seven within the octave. And this is exactly the situation.

Once even a small series of tones is established, such as those standing in intervallic relation of first, fourth, fifth and octave, in any inversion, already three scales are possible—do, fa, sol; sol, do, re; do, re, sol, according to the position of the intervals and the choice of a ground tone. Such scales are exceedingly common in all primitive music, the ancient Hawaiian being a case in point. Many Hawaiian tunes are confined to these tonal limits. Some are even more restricted.³⁸ Many North American Indian songs also offer examples of limited tonal material. Some that come instantly to mind are the long series of ceremonial songs connected with the girls' adolescence ceremonies among the San Carlos Apache,³⁹ chiefly confined to the interval of a fourth. These songs are not only limited tonally, but structurally. Naturally, little in the way of structural development can occur. But along with tunes actually limited to two or three tones, others tonally more colorful exist. It would be impossible to state positively that the more limited tunes are the more archaic, although it seems probable. However, if they are older, there is no reason why they should not have survived into an age when greater tonal possibilities were recognized, nor why limited tonal groups of different sorts may not have come into existence at about the same time among the same folk, without being necessarily coalesced into something accepted as a more complete scale.

Divided levels are observed in many of the more limited tunes, in others, a pronounced preponderance of one tone over the rest. This is what might

³⁸ H. H. Roberts, *Ancient Hawaiian Music*.

³⁹ Transcribed by the writer for the American Museum of Natural History but never published. The great antiquity of adolescence ceremonies in the religious activities of primitive peoples is apparently established. Presumably, though not actually capable of proof, the accompanying melodies, or the melody styles, are also very old.

be expected. In understanding the nature of derived scales and their probable, but not necessarily, relative primitiveness according to the kind and number of tones involved, the weighting of the tones as described on pp. 93, 94, is particularly valuable. The skeleton structure of the derived scales of some Hawaiian chants containing more than the two or three tones indicated above is seen to consist of these same tones in heavy preponderance, around which lie a number so fugitive by comparison with them as to resemble sparks struck off in the process of hitting them. As Mr. Herzog has intimated,⁴⁰ such fleeting tones may be only bad hits at the levels in mind as ideals. It is true that they generally lie within a degree or a degree and a half of the principal tones. But it is also equally probable that the process of playful variation is at work, and that the fluctuations are there by intention. Certainly a great many accurate hits occur in proportion to few inaccurate ones. In other Hawaiian songs of the old school, the ephemeral tones range somewhat farther afield and become more definitely melody structure tones.

Taking the three suppositional early tonal groups postulated above, i.e., do, fa, sol; sol, do, re; do, re, sol; it is but a step in combination and octave transposition to arrive at four-toned groups which might be represented by do, re, fa, sol, re, fa, sol, do; fa, sol, do, re; sol, do, re, fa;—the first and third of which, at least, occur very commonly. It is seen that at once the major second and minor third are introduced, and that by shifting the ground tone from do to some other of the tones, the interval relations become shifted and groups like our la, do, re, fa (to take the first and transpose the ground tone), or re, sol, la, do (to take the fourth), are achieved, among others. These two are also very commonly encountered in primitive music, complete or with a single tone omitted. The Snohomish Indians, and many other peoples, make frequent use of combinations like re, fa, sol, or la, do, re. Perhaps such evolutionary schemes, which, however, I do not claim have been universal, might account for the readier appreciation of minor over major thirds among certain peoples, during historically long periods. Efforts to fill gaps such as that between re and fa in the four-toned group do, re, fa, sol, might bring about all sorts of thirds.

Further transposition of do (or substitutions of the different levels as ground tone) in a group such as la, do, re, fa (the first transposition postulated above), might result in a group which we could represent by mi, sol, la, do, in which the major third (by inversion) and the minor sixth would appear. Or another combination like re, fa, sol, te might be conceived of,

⁴⁰ *Op. cit.*, 220.

with a hypothetical *do*. A shift of ground tone in the fourth transposed group mentioned above (*re, sol, la, do*) could produce *mi, la, ti, re*, in terms of a *do* not heard. These cases of *do* understood rather than heard would of course probably occur only when other tonal combinations containing *do* had become familiar as groups, on which the new combinations could be superimposed because of the presence of intervals common to both series, thus enlarging and expanding the range of the tonal groups. Already it begins to be apparent how almost infinite are the possible combinations, which sooner or later would introduce all of the peculiar (to us) tonal groupings encountered in primitive music.

Once theorizing begins, and various intervals become fixed in consciousness even without theorizing, it is seen that there are many other ways of experimenting and arriving at scales. One that would eventually result in the simple Pentatonic of varying modes containing both major and minor thirds, is that of building by fifths. Thus, from a hypothetical fundamental, *c*, the fifth, *g* is found. The fifth of *g* is *d*, which may be used in the second octave, or transposed so as to fall next to the original fundamental, *c*. The fifth of *d* is *a*, thus giving the fourth tone of the group, now composed of *c, d, g, a*. The fifth of *a* is *e*, which transposed down an octave, falls next to *d*, and with this much of the cycle the first mode of the Pentatonic, *c, d, e, g, a*, is the result.

Another Pentatonic mode might be obtained by working downward a fourth from *c*, as a starter, to *g*, and from *g* down a fourth to *d*, all in the same octave, but further progression by fourths would require octave transposition upward to secure a tonal group lying within an octave compass. By combining fifths and fourths in one process, it might be achieved more readily. Thus with *c*, as a starter, *g*, the fifth, might be also conceived as a fourth below *c*, in the lower octave. Going up a fifth from this brings *d*, and down a fourth from *d* brings *a*, and up a fifth from *a* brings *e*. This is only one of several possible progressions which would result in one or another of the modes of the Pentatonic, without resorting to octave transposition.

Another type of scale could easily be created by a slightly different fashion, such as building up from *c* by fourths, when at the second leap the minor seventh of the original level would appear. This could be reached in another way. Taking a fifth, *g*, above a fundamental *c*, and either its octave below, or the octave of the fundamental, above, both fourth and fifth are present as intervals, if not as degrees above a fundamental. Now taking the same intervals from the fifth, *g*, as a new fundamental, the major second, *d*, of the original fundamental appears in both octaves. If we as-

sume that the interval of a fourth has become familiar as the result of hearing the relation between the original fifth *g*, and the octave of the fundamental *c*, then by striking a fourth above this fundamental and taking it, *f*, as a new level and finding its fourth both above and below, this tone would be the minor seventh from the original level. One might then develop a scale represented by *b* flat, *c*, *d*, *f*, and *g*, a Pentatonic, in mode I. There are almost endless ways of building. None requires very much in the way of tonal memory, and all involve only the simplest tonal relationships, although it must be admitted that as original inventions they were probably long in coming. Since by many of these methods the minor third is introduced in several capacities and the major only after considerable juggling, this may have greatly affected certain musical histories, in fact many of them.

This brief excursion into hypothetical histories of primitive melody and early theoretical scale building merely serves to show in how many ways, by no means all illustrated, similar results may be achieved through simple and probably unconscious play, wholly without instrumental experience, or by not particularly difficult experimentation with the aid of instruments, especially strings. In the nature of the case, Pentatonic scales would be hit upon often. Since to accomplish the first steps doubtless required a very long time among different peoples, certain tones or combinations probably served lengthy apprenticeships, during which the intervals established may have become those habitually stressed in later, more expanded tonal groups. It is impossible in the light of such analyses, to consider only one historical or one psychological origin, even of identical modes, as certain writers have been prone to do. Many songs hastily classed as Pentatonic, because they do contain the tones of the Pentatonic scale in some one or more of its five modes, are seen by their derived skeleton scales to be at bottom quite different. Again, just because tonal groups which comprise less than a Pentatonic may nevertheless fall, or be arranged to fall, on degrees coincident with some of the degrees of a Pentatonic mode, is no justification for classing them as belonging to "the Pentatonic system," any more than fitting Pentatonic to Major and Minor scales of modern Europe of which they may seem to be incomplete representatives. Not even when full Pentatonic scales are found in some of the songs of the same people, is it justifiable, without a knowledge that such a theoretical scale exists among the people in question. The song with less tones may have had a very different history from that with more. Generally speaking, the more tonally limited are, naturally, to be regarded as the parents of later, more developed scales, including the pentatonics of various types in different lands,

while these, in turn, in divers ways, have in practice and theory probably preceded and certainly survived into, the ages of more complex scales.⁴¹

On the other hand, the privilege of selecting only a few out of a number of tones in a familiar group for the material of a given song may not be denied primitive singers. Choice and restriction is as much of an art evolution as elaboration and complexity. Thus, also, perhaps numerous Russian folksongs, based on pentatonic scales of contiguous degrees, as well as large numbers based on certain hexatonic scales, may have a sort of selective art-history, even though the selection may have been unintentional rather than deliberate. But at the same time this principle of choice and restriction may not be used as a *sine qua non* of explanation for scales it is desired to fit into larger systems. When ceremonial songs of certain types tend to follow tonal (as well as structural) patterns, while those of other types in the music of the same people present more extended tonal material, the case for choice and restriction is more clear, but the more limited songs may be survivals of fortuitous developments rather than examples of cultural exclusion and simplification. Only where music has progressed to a fair degree of melodic elaboration, where numbers of tones are known and handled with facility, may the selection of a few, which probably would not be placed in such combinations as they occur through any natural course, be plausibly ascribed to the use of a specially tuned instrument, or to some particular stylistic preference.

PRACTICAL DIFFICULTIES IN THE WAY OF CHARACTERIZING EXOTIC ART

Primitive music is a difficult field. The subject is extremely technical, involving as well a knowledge of physics, music history, dancing, and art form in general, psychology, languages, ethnology, to mention only the most vital. Great difficulties lie in the way of bringing a knowledge of any exotic music to even those readers who should be most interested—musicians, and ethnologists whose knowledge of music is often limited. In writing for any audience, it is always preferable to use a language and terms easily comprehended, though if, in matters of primitive psychology, they (and the investigator as well) could thoroughly understand the language of the people in question, much would be revealed that must perforce remain obscure. In writing for musicians and for a public which, if it knows anything of music, is acquainted with the usual European notation, it has al-

⁴¹ Moore, *op. cit.*, 29 ff., has unwittingly shown, from a different point of view, the middle position of the Pentatonic in the history of scale development.

ways seemed justifiable to me to employ this notation, modified where necessary. Practically speaking, it is impossible to represent written music in a way to convey all that is heard to one relying solely on visual records. It is true that for recording purposes the most mechanically accurate transcriptions compatible with practical considerations should be employed, but in material intended for general perusal and comparative purposes, esoteric, individual systems of notation, evolved by various investigators, only serve to obscure the problems. The argument for using them is weakened by the fact that variations in performance from rendition to rendition tend, in most cases, to be large enough to offset the advantages gained, except for those minute variations which are of psycho-biological rather than of musical or anthropological significance.

In describing the music, we must use more or less familiar terms, or invent new ones which, if too many, will discourage all readers except a mere handful of specialists from taking the time to learn them. Many terms in wide usage mean now one thing, now something else. Because no others so well suit the purpose, they continue to be employed in several senses. The fact that some terminologies have rather different connotations in Europe than in America complicates the situation. It becomes the old problem again of splitting hairs over meanings, apparently impossible to avoid entirely in any science, tiresome as it is. It is necessary to be extremely careful, in the scientific musical field, as in others like psychology, to avoid incurring bitter criticisms from people who can not, or will not, comprehend our meaning.

Aside from questions of particular terminology, however, there have been creeping into the writings of many who discuss primitive music in one way or another, generalizations which, like those concerning scales, are made and passed on until they gather credence out of all proportion to the degree of evidence. Many such remarks are made about American aborigines, as if they were a unit, when every ethnologist with field experience in more than one area knows how diverse they are. European writers not as familiar with American ethnology as they might be, tend to speak of the Indians as a unit, but they are not without example from the home circle. Since the Indians are so diverse in language, material culture, social organization and religion, is there any reason why the music of so vast a conglomeration of cultures should be the one trait expected to fall into more or less uniformity?

In common with all primitive music, as opposed to that of civilized peoples, it has some few similarities, such as the pronounced propensity toward monophonic music; great variety of tone groupings and, so far as

known, absence of established norms, prevalent, but not invariable irregularity of meters, more or less undeveloped melodic structures where perhaps the most common device for lending length to compositions is repetition of the same units over and over, rather than expansion and development of themes; and a paucity of musical instruments, particularly those with wide tonal possibilities. At first glance any parallels between primitive and classical European music might seem improbable. But all along the line are found, if not in one tribe, then in another, traces or beginnings of features now developed in civilized music. Thus appear melodic sequences, complete and partial; internal expansion and contractions of little melodic themes; terminal extensions, inversions, melodic rhyming and the like. In structural forms, as in scales, are also evident many different combinations and forerunners of pronounced styles, hints of ways of musical thinking divergent from our own, which narrowed long ago into special channels from which it is only now emerging.

One of the most interesting, if comparatively rare, devices found in the music of North American aborigines is that of modulation. It is interesting, not only because it is rare, but because it signifies an important step toward thematic development, and because it is at present a marked feature of European music—one which we consider beautiful, with endless possibilities of richness. Where modulation occurs in Indian tunes it is rudimentary, so far as I have noted it, but it is encountered frequently in the songs of the Copper Eskimos. Modulation, as a term used here, has exactly the same connotation as in European music. It consists of a shift from a tonal setting having a given ground tone, to another tonal setting with the same or a new ground tone, accomplished through progressions employing pitches or intervals common to both tonalities. Copper Eskimo songs frequently do just that, and the melodies may return by a similar process to the original setting with which they started.⁴²

Let us discuss some frequently repeated generalizations about American Indian music. It is often said to be all ceremonial, whereas this is very far from the truth. Indians have their secular as well as religious songs in great numbers. Unfortunately ethnologists have been prone to kill several birds with one stone by collecting the music of ceremonies which they were studying for other reasons than merely the music, leaving untouched the less conspicuous topical songs. Thus most American Indian music which has been published is of a ceremonial nature. Some tribes may have less secular

⁴² An examination of songs 49, 66, 83, 100-101, 102-104, 124, 135, 137 in the Copper Eskimo collection will reveal modulatory principles at work.

music than others, it is true, but probably very few completely lack secular songs.

The songs of most tribes where singing is indulged in freely are likely to number hundreds or even thousands. The ceremonial life may involve hundreds of special songs, as many as forty or fifty belonging to any one particular ritual. Often those of a special ceremony are more or less similar, for in many tribes there does appear to be a tendency toward melodic patterns to correspond with functional patterns in ceremonies and the like. While this cannot be categorically stated to be true of all tribes or ceremonies, it is sufficiently common to be noteworthy, and to furnish a pitfall for those who generalize on the music of a single tribe with only the songs of one or two ceremonies to go on. This trait may even involve tonal groupings, to say nothing of meters, rhythms, melodic composition and peculiar habits of style, such as turns, flourishes, voice tricks, and so on. Where so many songs are concerned, work on even two or three thousand, culled here and there over all of North America, is hardly enough on which to generalize about North American Indian music as a whole.

We hear much about the descending trend of American Indian melodies, as if the tunes of other countries did not, for the most part, likewise descend in trend, or end with a falling inflection. Then, too, many Indian melodies do not fall, but fluctuate about a general level lying somewhere midway of the tonal range. Some Indian tribes, it is true, exaggerate the falling trend. This is specially the case with songs of certain ceremonies like the Morning Star, practiced by the Pawnee, which present the same melodic themes in progressively lower octaves. But descending trend and particularly descending endings are worldwide phenomena. On this point Max Meyer says:⁴³

The normal end of a mental process is, of course, characterized not by strained but by relaxed attention, for strained attention means continued mental activity. It is natural, therefore, that a melody ends with a falling inflection.

Not so long ago, we always received with some degree of surprise melodies which began on low and gradually worked up to high pitches.⁴⁴

⁴³ Max Meyer, *American Journal of Psychology*, Vol. 14: 456, 1903.

⁴⁴ The rôle of expectation of course assumes importance in our pleasurable acceptance of such stimuli, as in the judgment of consonant intervals (provided the stimuli are not too hackneyed), and expectation is affected by experience. On the other hand, the unexpected causes annoyance, or at any rate, amusement. Only four possible courses are open to melody,—(1, 2) more or less continuous descending or ascending trends, (3) progression at about one level, or (4) excursions above and below it—around it. Some fundamental psychological principle appears to account for descending trend being widely employed. Progression at about one level is not uncommon, but lacks interest. Ascending trends appear to be correlated with effort

A recent article by an acknowledged authority on North American Indian music⁴⁵ sums up some of the outstanding features of American Indian singing as opposed to European, giving the impression that the traits mentioned are peculiar to the Indians. A wider acquaintance with primitive music in general would make it clear that some of these traits mentioned are not merely Indian, but rather are common to all primitive groups, so-called, or at any rate, are found widely outside of North America. Thus under *Racial Peculiarities* we read, p. 652:

A second racial peculiarity is the Indian custom of spacing the accents unevenly in song. The spacing is not always determined by the words, as instances have been noted in which the words are accented differently in speaking and singing.

This is by no means merely an Indian trait but is found to a marked degree in rudimentary music the world over. Again:

Another racial peculiarity is the ability to dispense with rests. A difference is seen in singers, the old Indians not requiring a pause for breath during a long melody, while Indians of the present generation introduce eighth-note rests when needed for taking breath.

This is also not a peculiarly racial trait. The Hawaiians are notorious for being able to sing long chants without breath-taking. The old Italians could do the same.

A further peculiarity, so general that it may be considered racial, is a pulsing of the voice on prolonged tones,

but this is also found in Polynesia. As another racial trait is mentioned the divorce of words from song, that is, the fact that many Indian songs do not contain intelligible words, but only burden syllables. This surely is not merely Indian. It is stated, p. 651, that while some of the vocables in the meaningless syllables may be recognized and written out, as *ho-ho* or *hi-hi*, generally it is impossible to represent vocalization by letters. I do not quite comprehend the meaning of this sentence. It is true that many burden syllables are used in songs by different Indian tribes; I have noted hundreds with such syllables as *hi ya*, *ho ya*, *he ya*, *hen nu*, *hin nu*, to give only a few, but practically all can be phonetically expressed. Under the head of *Per-*

or restlessness, if not as fundamental concomitants, at least as long-established custom in thinking. Too excursive melodies, if not well designed, tend to annoy by their failure to satisfy the demands of expectancy, or if well-planned, to amuse. But it is not possible, in the scope of this paper, to exhaust this subject.

⁴⁵ Frances Densmore, *Peculiarities in the Singing of the American Indians*, AA 32: 651-661, 1930.

sonal Peculiarities, examples are given from different parts of the country without subheadings. There it is stated that a falsetto tone is rarely heard (meaning, presumably, in the music recorded by the author, but reading as if it applied to Indians in general). Navaho vocal music is full of it. In fact, it amounts to a tribal style, and I have heard it in Siouan as well as in Iroquois songs. Falsetto singing other than Indian is, of course, rather well known.

CONCLUSIONS

(1) An attempt has been made to show that the organization of tonal and rhythmic elements into designs creating melodic composition is a phase of musical art quite as important to study as the tonal material itself. Because these designs are the products of people in less developed stages of culture does not necessarily imply that they are negligible art factors. Nor is it true that such as are found are always subordinated to poetic forms.

(2) An effort has been made to point out that, in the absence of knowledge of the existence of theoretical scale norms postulated by a people whose music is under discussion, it is not legitimate to attempt to assign derived scales to any preconceived "system," since the tonal materials used in such cases really are not scales at all and tend to be numerous and varied in any group. In regarding them as scales we are reading in meanings from our own cultural background. It can be demonstrated how many are the ways in which tonal groups superficially alike may have developed parallelisms. The problem of deriving scales, or tonal materials ranged in order of pitch and prominence, from songs by the objective method alone is exceedingly complex. Absolutely essential to a complete understanding of melodic development is a knowledge of the genetics of intervals, and of consonance and dissonance, whether these terms are used in a harmonic or a melodic sense.

(3) On the basis of the foregoing discussion it becomes clear that all "Pentatonic" scales do not belong to one "system," and it is also patent from collected material that Pentatonic scales are not typical of either Scotch or Russian folksong, as has been commonly supposed. Presumably similar generalizations regarding the Pentatonic character of other national musics require investigation. Even if Pentatonic scales are discovered to be the main types found in these musics, the questions of mode and position of the ground tone remain paramount and should never be overlooked.

(4) The weighting of tones derived from primitive songs not only reveals tone-color preferences but probably also historical developments in interval relationships. Not all "off-pitch" thirds may be relegated to the class of

neutral thirds as representing efforts to compromise between major and minor thirds or to divide equally the interval of the perfect fifth. The production of thirds is influenced by factors not yet fully understood, but it is not beyond the range of possibility that many so-called primitive peoples are in a stage of musical growth where the difference in color between major and minor thirds is becoming appreciated, and where the plays between them are not hit-or-miss attempts, nor yet fine efforts at compromise, but are made for their aesthetic effects.

Primitive music is merely one valuable approach to the problems involved in the general laws of growth and development of human institutions. The theories of independent origin from similar physical, physiological or psychological conditions, parallelisms, convergence, limitations of possibilities, borrowing, and the like, arise here as in all other social phenomena. But in an attempt to solve these problems no motto could be more useful than a warning of Andrew Lang's,

. . . we ought especially to distrust any hypothesis which, in complex matter, professes to colligate all the facts.⁴⁶

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⁴⁶ Andrew Lang, *Introduction to Anthropological Essays in Honor of E. B. Tylor*, p. 4. Oxford, 1907.

PROBLEMS IN THE STUDY OF
ANCIENT AND MODERN
BASKET-MAKERS¹

By GENE WELTFISH

BASKETRY, as one of the most ancient products of American Indian handicraft, is peculiarly useful for comparative study. It can be approached and controlled technically from many points of view, because in the basketry art the fundamental mechanical factors involved in the technical process objectify themselves in the product and are not lost in the process of making. In controlling basketry for comparative purposes, a variety of problems come up—including problems of technical criteria and description, questions of the stability and comparability of technical traits, problems of exact allocation, and in the comparative study itself, questions of chronology or allocations in time and the general methodological problem of in how far the basket-making art can be used as a key to cultural and physical relations of native groups, past and present. It is important also to weigh technical details and peculiarities. Such as are unique, that is, with a very limited distribution, or such as can be shown to be independent of mechanical factors, are more significant for history than such traits as have a very wide range of distribution, or are clearly the results of functional or mechanical factors of the process.

Certain of these questions I have considered elsewhere.² In the present discussion I have concentrated attention on a typological consideration of the North American prehistoric material, and the historical problems suggested by it.

Prehistoric basketry material from sites north of Mexico, which I have analyzed, falls on a technical basis into five general types. For convenience, I refer to these types in the following in terms of the sites or regions with which they are primarily associated. In this way the types are Southwestern, Ozark Bluff Dweller, Lovelock, Snake River, and California Cave.

These five types can be adequately characterized on the basis of several technical traits which are in no way mechanically interdependent. For coiled

¹ Read at the annual meeting of the American Anthropological Association and the American Folklore Society, Poughkeepsie, New York, December 28, 1929; revised. Fellow of The National Research Council.

² Prehistoric North American Basketry Techniques and Modern Distributions, AA 32: 454-495, 1930. The present discussion is essentially supplementary. In the former paper references to the location of material and to publications were made; where the same material is in question, I have not repeated the references.

Other aspects of the problems are considered in *Technique and Design in North American Basketry* (in ms.), and in *Notes on Prehistoric Southwestern Basketry* (in press).

basketry these are: direction of work, whether to left or right as the work is held by the basket-maker, the surface of the basket worked, whether inside or outside; the foundation, as regards the number and form-arrangement of the elements; and the character of the stitch, whether interlocked, non-interlocked, or split. For twined basketry, the technical traits are direction of work, surface of the basket worked, the upward or downward lean of the stitch in the direction in which the work proceeds, and the nature of the warps.

Southwestern prehistoric material includes Basket Maker, Cliff Dweller, and some sporadic material, such as "Ancient Pueblo."³ Basket Maker material is predominantly coiled ware; it has been found north and south of the San Juan drainage, in southern Utah, northeastern Arizona, and southwestern Colorado, at sites classified as Basket Maker and Post-Basket Maker. The sites have also yielded a few pieces of twilled ware. Cliff Dweller material includes coiling and twill-plaiting and comes from this same general region. In Cliff Dweller remains yucca-ring baskets predominate over coiled ware. Except for the appearance of twined basketry at Palatki and in material called "Ancient Pueblo," twined basketry is unknown in prehistoric Southwestern material.

Southwestern type coiling can be characterized as made toward the worker's left, with the inside surface the worksurface and with non-interlocking stitches. Within this type there are differences in foundation. Basket Maker and Cliff Dweller are made on two-rod-and-bundle-triangular foundation, and on two-rod-and-reed-triangular foundation; with occasional specimens on rod-surrounded-by-bundle foundation. A third kind of foundation found in prehistoric coiling of the region, which cannot be referred to either Basket Maker or Cliff Dweller, is three-rod-triangular foundation. The baskets referred to agree in all other particulars with Basket Maker and Cliff Dweller types. Exceptional, possibly intrusive, are sporadic specimens of one-rod coiling with interlocking stitches; these, however, are in material which has not been completely controlled.

³ In Notes on Prehistoric Southwestern Basketry, I have enumerated and classified the prehistoric material from the region. Therein the distinction of Basket Maker type from Cliff Dweller (by texture of the coiling and the presence of yucca-ring baskets as a typical Cliff Dweller product) is called attention to, as well as the presence in the region of three-rod-triangular foundation coiling, and certain sporadic types which may prove intrusive. Nevertheless, these differences of types are local as compared with the contrast between what I refer to as Southwestern type (taking all the prehistoric Southwestern material as a whole) and the other four types under consideration. In addition, it should be noted that the San Juan area, as pointed out in the discussion referred to, forms a unified area within Southwestern prehistoric as a region.

The Lovelock type of prehistoric material comes for the most part from Lovelock cave, Nevada. It includes, besides coiled ware, twining and wicker. I refer to these as Lovelock coiling, Lovelock wicker, and Lovelock twining. I have also seen material of this type from sites on the north bank of the Columbia river, Washington.⁴

Lovelock coiling is of four varieties.⁵ The predominant variety is on three-rod-triangular foundation or two-rod-and-splint-triangular foundation, worked from the outside and to the left of the worker, with stitches split on the inside or non-worksurface, or split both inside and out. The two kinds of splitting do not occur together on the same baskets. The texture is coarse, running 5-7 coils and 6-10 stitches per inch in the specimens I have examined.⁶ This variety of coiled basketry, described by Loud and Harrington as "coarse coiled basketry, 3- or 4-rod foundation," occurs in Lovelock cave throughout all the levels from start to finish; only feathering distinguishes some of this type as of the lowest levels.⁷

A second variety of coiled Lovelock basketry is on three-rod-triangular foundation, made to the left of the worker on the outside worksurface—agreeing in these characteristics with the above. It is distinguished by its much finer texture and the fact that the stitches interlock (without splitting). Measurements of texture range 7-11 coils and 17-22 stitches per inch.⁸ This variety was found only in the upper two levels.⁷

⁴ The material I refer to was found by H. W. Krieger of the U. S. National Museum in cremation burials near Wahluke, Grant county, Washington, on the north bank of the Columbia river. The burials were three to eight feet deep in solidified sand and were associated with abandoned pit-house village sites. No European artifacts were found associated with the material. Small charred fragments of coiling and twining were found, as well as some tule matting. With Mr. Krieger's permission, I examined these in Washington in March, 1930. Material now in the U. S. National Museum.

⁵ The technical distinctions I have made are based on an independent examination of Lovelock material, primarily that part of the material which is now in the Museum of the American Indian, Heye Foundation, prior to the publication of results by Loud and Harrington. (L. L. Loud and M. R. Harrington, Lovelock Cave, UC-PAAE 25, no. 1, 1929.) It is clear from their descriptions that the varieties of basketry Loud and Harrington refer to are identical with those which I arrived at independently. In the discussion I have attempted to correlate my types with theirs, and with Harrington's stratigraphic diagrams. This is true also of the discussion of twining which follows.

⁶ Loud, *op. cit.*, 66, gives 2-3 coils and 2-4 stitches per cm. (about 5-7½ coils and 5-10 stitches per inch). This is Loud's "type *a*, split stitch."

⁷ Harrington, *op. cit.*, 26.

⁸ Loud, *op. cit.*, 66, gives the following measurements. finest specimen 42 coils, 92 stitches per 10 centimeters (10½ coils, 23½ stitches per inch); range of fragments 22-36 coils and 56-70 stitches per 10 centimeters (5½-9 coils and 14-17½ stitches per inch). This is Loud's "type *a*, narrow stitch."

A third variety is on one-rod foundation worked toward the left of the worker on the outside worksurface: the stitches are split on the non-work-surface, or they interlock. Occasional specimens show this interlocking and split-stitch work on the same basket.⁹ In addition, the stitch splits the foundation rod of the course below rather than passing under it. The texture of this variety is coarse, ranging from $3\frac{1}{2}$ to 6 coils and $3\frac{1}{2}$ to 5 stitches per inch.¹⁰ This variety occurred at Lovelock in the upper three levels.⁷

The fourth variety¹¹ of coiling from Lovelock is made on a one-rod foundation toward the left of the worker, on the convex worksurface with interlocking stitches. The stitch goes under the foundation rod of the course below. It does not split the foundation rod as in the other one-rod-foundation variety. The texture of this variety is fine, running from 10-12 rods and 12-16 stitches per inch.¹²

The coiled material from Columbia river, Washington, was all worked from the outside toward the left of the worker with interlocking stitches. Some fragments showed three-rod-triangular foundations, others single-rod foundation. In the latter form-foundation, the stitch passed under the foundation rod of the course below. In all these characteristics, as well as general similarity of texture, this material is identical technically with the finer grades of Lovelock coiling, the second and fourth varieties as enumerated above. The Columbia river fragments were too small and charred to make stitch measurements feasible, particularly after examination.

Lovelock twining is of two varieties, one of which can be divided technically into two sub-varieties. The two main varieties are the flexible twined basketry and the rigid twined basketry.

The first variety of flexible twined basketry is made on a double twisted

⁹ Heye museum specimen 13 4974.

¹⁰ These are Loud's measurements (*op cit*, 67) (14-24 coils and 14-20 stitches per 10 cm.). Loud's "type b, roasting trays."

¹¹ The description of this type is based on the following four specimens: Heye 13 4668, and one Heye specimen for which I have no number; UCM (University of California Museum) 1 20010, UCM 1 20029. Loud (pp 65, 67, and pl. 29f) refers to the last one, under "type b, bowls" he has also included one specimen. (pl. 29e, UCM 1 20014), which I have considered as falling into the coarser type of one-rod coiling.

Apparently no one of the four specimens is the "finer coiled basket on single-rod flexible foundation, probably a hat, braided rim, outside once covered with dark downy feathers" which Harrington found in his fifth level (Harrington, *op cit*, 23 and 26). It is not clear from the stratigraphic diagram whether this fine textural type of one-rod coiling is to be associated with the fine coiling of the upper two levels.

¹² Loud, *op. cit.*, 67 under "type b, bowls" give measurements of UCM 1 20029 as 52 coils, 64 stitches per 10 cm. (13 coils, 16 stitches to the inch).

fiber warp, with a weft of tule or cat-tail (hence both warp and weft are flexible), decorated in overlay of golden color and black or dark brown, with design identical both on non-worksurface and worksurface, the stitches leaning downward toward the right (in the direction in which the basket was worked).¹³ These are made in plain and three-strand twining, and some wrapped-twine stitches.

The second flexible variety is made on stick warps (the sticks being thin), with weft of cat-tail or other pliable material (hence warp is semi-rigid, weft flexible), decorated in overlay of black or dark brown and light golden color, with design identical both on worksurface and non-worksurface, the stitches leaning upward toward the right. These are made in plain and wrapped twining.¹⁴

Both these varieties of *flexible* twined basketry are limited in their occurrence at Lovelock to the lower three levels.¹⁵

The rigid twined basketry is made on heavy stick warps and has wood or splint weaving threads (hence both warp and weft are rigid); design is not discernible, except in certain dark stitches which may have been dark red or dark brown. The stitches lean downward toward the right. In this variety there is plain and twilled-twining.¹⁶ Rigid twined basketry occurs at Lovelock only in the upper four levels.¹⁵

The twined material from Grant county, Washington, is of the flexible type with double twisted fiber warp, decorated in overlay, the design being identical both on the worksurface and non-worksurface; the stitches lean downward toward the right. They are made in plain twining with occasional rows of wrapped twining. In all these characteristics this material is technically identical with the Lovelock first flexible variety of twining, as above.¹⁷

Lovelock wicker has round stick warps and flat ribbon-like wefts, which are woven two strands at a time. Each of these strands has a dull and a shiny surface; the two strands are placed one dull surface against the other so that the wefts are shiny both on the inside surface and the outside surface of the basket. The design is in dark brown bark, one of the weft

¹³ *Op. cit.*, pl. 31*a*, *d*, *e*.

¹⁴ *Op. cit.*, pl. 10, 30*b*, 31*c* (tee weave), and *f*. See also Heye 13,4995 (decorated with band of human hair woven in).

¹⁵ *Op. cit.*, 26.

¹⁶ *Op. cit.*, pl. 31*g*, *h*, *i*, *k*, *l*.

¹⁷ In connection with this discussion of twining, it is important to realize that the criterion of the direction of work (not, however, the lean of the stitch) is not useful comparatively because all twined basketry of North America is made consistently in this one direction—to the right of the worker.

threads having the bark on, and the wefts are so twisted as to give a reverse design on the non-worksurface.¹⁸ The border weave is made by turning back the warps at right angles and weaving them into themselves back to two rows of twining which demarcate body from border.¹⁹ The twined stitches used agree technically with Lovelock twining of the rigid variety. In addition, there is a Lovelock fragment which combines wicker and twining in the making of the body of the basket.²⁰ This twined work also is of the Lovelock rigid variety, and the decoration is made as those of the wicker baskets described above.

The Lovelock wicker basketry occurred in the second, third, and fourth levels exclusively.²¹

A correlation of these Lovelock techniques in terms of Harrington's levels and periods is as follows:

In the older period (fifth and sixth levels) flexible twining of both varieties coexists with the first (coarse texture) variety of Lovelock coiling (three-rod-triangular or two-rod-and-splint-triangular) which has feather decorations; the flexible twining persists into the lower level of the Transitional period.

In the Transitional period (third and fourth levels), wicker appears early, flexible twining disappears, and rigid twining appears in the upper level along with the third (coarse texture) type of Lovelock coiling (single-rod). The twining which makes its first appearance here is the kind which occurs on wickerwork. Lovelock coiling of the first type persists, but feather decoration has disappeared and colored splints are used.

In the Late period (first and second levels), the second (fine texture) type of Lovelock coiling (three-rod-triangular with interlocking stitches) makes its appearance, probably also the fourth (fine texture) type of coiling (single-rod foundation with interlocking stitches). Rigid twining persists throughout, as well as both coarse types of coiling. Wickerwork apparently persists only into the lower level.

Material called Snake river type comes from a cremation burial near Page, Washington, on the north bank of the Snake river about fifteen miles from its confluence with the Columbia.²² The basketry remains consisted of small charred fragments of coiling and twining.

¹⁸ *Op. cit.*, pl. 27 and 28, and pp. 60-64.

¹⁹ The border weave is described also by Loud-Harrington (p. 61).

²⁰ Heye 13/4972.

²¹ *Op. cit.*, 26.

²² Found by H. W. Krieger of the U. S. National Museum. The material was found at a depth of eight feet; there were no European artifacts. In the site were also found a corded skirt and tule matting. There were no pit-houses associated with the site. Material now in the U. S. National Museum.

The Snake river type coiling was made on the convex worksurface toward the right of the worker, on a multiple splint foundation, the stitches split through and through. It is decorated in imbrication and has a false-braid edge. The Snake river type twining is very fine, made on a double-twisted fiber warp, the weaving thread may have been apocynum; there is also some frapped twining on the fragments.

The Ozark type material has so far been found only in the Ozark Bluff Dwellings of Arkansas. It includes some checker and twilling in cane splints, as well as some coiling. The coiled material I have examined consists of two whole trays and one fragment.²³ The trays are characterized by left direction of work, concave worksurface (probably), on two-rod-vertical foundation, with stitches split on the non-worksurface. The fragment shows left direction of work, single-rod foundation with interlocking stitches, the stitch passes under the foundation rod of the course below. Both trays have a plaited starting-knot.

Coiled ware from caves of California is worked toward the right of the worker either on the inner or outer surface, has non-interlocking stitches (without splitting of any kind) and a multiple-grass foundation.

Modern material comparable to Southwestern type coil is found today in the southwestern United States among the Navaho, Ute, Apache, Havasupai, Pima, and Papago. There are some technical differences in the work of these tribes, and only Navaho basketry, usually classified in museums as Old Navaho, is identical technically with the specific Basket Maker type coil. It is known that contemporary Navaho basketry is made by neighboring Ute and sold to the Navaho. It is highly probable that the old Navaho ware was made by Navaho basket-makers. Dr. P. E. Goddard, some years ago, told me that the Navaho claim to have discontinued making baskets because the work was surrounded with a great number of burdensome ceremonial taboos and restrictions. The modern Ute-made Navaho basketry differs technically from the theoretical Old Navaho and from Basket Maker type coil in that the foundation is three-rod-triangular instead of two-rod-and-bundle triangular.²⁴ "Ancient Pueblo" coiled basketry from Zuñi, Sia, Hopi, and Santa Ana is in all particulars like coiled work of the Basket-Maker-Cliff-Dweller specific type.

²³ Heye 11 7258 (Allred Bluff Rockshelter, Benton county), Heye 11 6568 (Indian Bluff Rockshelter, Benton county, pit no. 2), Heye 11 7544 (Alum Cave Bluff, Benton county)

²⁴ It is probable that the only coiled baskets made by the Ute on three-rod-triangular foundation are the baskets they make for the Navaho. Other Ute coiled basketry is made on two- and three-rod-vertical foundation; in such characteristics as non-interlocking and left direction of work it is consistent with Southwestern type, but it is worked on the convex worksurface. Cf. AA 32, 470.

Basketry identical in technical characteristics with prehistoric Southwestern type coiling of the three-rod-triangular foundation variety is made by modern San Carlos and Jicarilla Apache and Havasupai.²⁵ Modern Pima and Papago coiled ware differs only in foundation from prehistoric southwestern type; it has a multiple splint foundation.

While these tribes form a rather continuous area of distribution with regard to prehistoric sites, it is curious that the Navaho, who are probably responsible for the most recently made basketry technically identical with Basket Maker coil, live today in practically the same localities as are associated with Basket Makers and Post-Basket Makers. It is interesting to note, however, in this connection, that the break or opening in Navaho band designs which is supposed to have ceremonial significance, never occurs in Basket Maker band designs. In the coiled baskets collected as "Ancient Pueblo" there is one basket in the U. S. National Museum without specific pueblo allocation which has a band design in faded dark brown or black, and this design has a break. The design is, however, a definite imitation of the Navaho "wedding basket" design.²⁶

There are suggestive modern parallels for certain of the technical types of basketry found at Lovelock:

The coarse three-rod-triangular Lovelock coiling (first type) is closely paralleled in modern Maidu work. Maidu coiling has all the technical characteristics of this Lovelock material (with the exception of false braid edge found on much of this type of Lovelock coiled ware), and in addition has decorations in the same style. So much is this the case that one piece found at Lovelock has a typical Maidu design and might well be mistaken for a piece of a Maidu basket.²⁷ While Maidu work is the closest parallel, Washo coiled work can also be compared with this type of Lovelock coiling.

Both Lovelock types of fine coiling, the three-rod-triangular (second type) and the single-rod (fourth type) can well be compared with modern Pomo work, where both the foundation-forms, with the associated technical characteristics, are typically used. The coiled material from the Co-

²⁵ In a former discussion I classified the work of the Mescalero Apache with the general modern Southwest area of basket-making. (AA 32: 470). Since that paper has appeared I have studied Mescalero basket-making in the field. As a result, the former conception needs correction. Modern Mescalero Apache coiled basketry is definitely an exception to the modern Southwest area. While the technique agrees with Southwest in surface worked (concave) and left direction of work, the foundations are of the *vertical* type, two-rod-and-bundle, three-rod-and-bundle, slat-and-bundle, and the manner of stitching is the equivalent of *interlocking*.

²⁶ USNM 221,415. Collected by F. H. Cushing. This basket is the only one of a total of twenty-three coiled "Ancient Pueblo" baskets which I have seen that has a band design.

²⁷ UCM 1 200,006. The design is illustrated in Loud and Harrington, 65, fig. 14d.

lumbia river is also closely paralleled in Pomo work; and note that this comparison is supported by the presence of pit-houses in the site from which the Washington material comes.

The flexible twined basketry of both varieties of Lovelock is similar to modern Pit River (Achomawi and Atsugewi) and Klamath twining. The Columbia river material can be similarly compared. In Harrington's Early Period, this type would thus associate with work similar to Maidu (save for the feathered decoration). The northeastern Maidu today make baskets in overlay twining identical in all technical respects and even materials with Achomawi and Atsugewi. Kroeber considers this Maidu twining to have been an instance of a cultural "complex" which has been taken over bodily.²⁸

The rigid Lovelock twined basketry compares with work of modern Pomo. Note that this Lovelock type and the finer grade of Lovelock coiling which is comparable to Pomo work, appear to be contemporaneous at Lovelock.

Lovelock coarse one-rod coiling has no identical equivalents in modern or prehistoric work. The one-rod coiled material which occurs in the Southwestern area in association with Basket Maker or Cliff Dweller material, as at Grand Gulch, while it is similar in some respects, has stitches fully interlocking (rather than split), is somewhat finer in texture, and is made on the concave worksurface. At the same time, this Southwestern one-rod-coiling is not as fine in texture as the fine one-rod Lovelock coiling with which it agrees in interlocking, but disagrees in surface worked. Miwok basket-makers today make one-rod coarse coiled ware with split and interlocking stitches on the convex worksurface toward the left of the worker, which have a general but not thoroughly convincing similarity to the Lovelock coarse one-rod coiling.

Lovelock wickerwork has no identical modern parallels. While it occurs at Lovelock in association with coiling and twining that compare with Pomo work, Lovelock wicker is not like the wicker technique used in Pomo seed-beaters. On the other hand, it is more like the Pomo work than that of modern Hopi and Zuñi or of prehistoric Southwestern wickerwork. The Lovelock border finish is similar in principle, however, to a border finish used occasionally by the Zuñi and Hopi.²⁹

The Snake river type coiling is identical in all characteristics with modern Coast Salish or Klickitat imbricated coiled basketry of the Salish

²⁸ A. L. Kroeber, *Handbook of the Indians of California*, BAE-B 78: 415.

²⁹ O. T. Mason, *Aboriginal American Basketry*, USNM-R 1902: 262, and figs. 62 and 63.

and Sahaptin basketry area. Culturally, the absence of pit-houses with this material is suggestive corroboration.

Ozark coiling is paralleled in modern work in the coiled gambling baskets of the Paviotso, Shoshoni, and Plains tribes.³⁰

California Cave type coiling is paralleled in south California in modern Yokuts and Mission coiling. Such modern basketry is technically identical with it and similar in manner of decoration.

In a former discussion I remarked "of modern technical methods, only that of imbrication, as used in the Salish area for decoration of coiled work, is absent in the prehistoric material."³¹ It now appears, from the occurrence of the ancient Snake river basketry, that all techniques of basket-making found in modern North America existed prehistorically.

With this in mind, it seems especially significant that the parallels for the prehistoric technical types in all cases are to be found in modern areas closely contiguous to the ancient sites. For prehistoric Southwestern, it is the modern Southwest basketry area; for Lovelock, the northern California-Puget Sound area and the central California area; for Snake river, the Salish and Sahaptin area; for Ozark, the Basin area and the Plains; for California Cave, the south California area.³² In addition, I should like to urge that the parallels I have drawn involve closer similarities between the ancient and modern basketry selected in each case than could be found in modern basketry between the work of the tribes selected and that of any other contemporary tribe. These facts lend weight to the theory that we are here dealing with cases of historical connection, of the persistence into modern times of a basket-making art, in each case in the same general region. Whatever the roots or origins of these basketry arts may be, their divergent forms and high technical development were already present in our earliest remains.

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³⁰ See my Coiled Gambling Baskets of the Pawnee and Other Plains Tribes MAHF-IN 7: 277-295.

³¹ AA 32: 494.

³² The description of these areas will be found in AA 32: 456-458.

ANTONIO DE CIUDAD REAL,
ETHNOGRAPHER

By RALPH L. ROYS

AS THE archaeological exploration of the Maya area in Central America progresses, we feel an ever increasing interest in the ethnography of this and adjacent regions which may have been influenced by Maya culture. As yet we may only conjecture which language of the Maya stock predominated in the spread of ancient Maya civilization. Consequently, the languages of Central America and their distribution are of considerable interest to the student of Maya culture.

As the linguistic maps are based partly on present conditions and partly on the information from the early Spanish explorers and missionaries, it is difficult to account for the scant attention paid to the ethnographic notes of Fr. Antonio de Ciudad Real. Not only did he travel extensively in Central America during the latter part of the sixteenth century, but he possessed qualifications which make his observations of extraordinary importance. A linguistic map based upon his notes would differ materially in some respects from any that has been published.

Fr. Antonio de Ciudad Real was one of that remarkable band of Franciscan friars associated with Diego de Landa in the conversion of the Indians of Yucatan. Except in the case of Landa, little of their work has come down to us directly, but they are undoubtedly the sources on which the writers of the following century drew for their information. Cogolludo tells us that Ciudad Real was the most accomplished Maya linguist of his time, and there are reasons for believing with Juan Martinez Herandez that his famous six-volume, *Gran diccionario ó calepino de la lengua Maya de Yucatan*, was the work known to us today as the *Diccionario del convento de Motul*. He came to Yucatan in 1573 and died in 1617, and he is said to have taken forty years to write this book. If the *Motul Dictionary* really is Ciudad Real's *Calepino* (so named from Calepinus' famous polyglot dictionary published in 1502), this little known Franciscan monk would appear to have been one of the most accomplished lexicographers of his time.

When Fr. Alonso Ponce arrived in Mexico in 1584 as Commissary General of the Provinces of New Spain, he speedily saw that his period of office was to be anything but peaceful. Not only did the members of the principal chapter of the order at Mexico City oppose him and manage to prejudice the new Viceroy against him, but Alonso de San Juan, his confidential secretary, failed conspicuously to cooperate with him. Father Ponce accordingly lost little time in sending to the monastery at Tezcoco for another secretary

who would prove more reliable, much to the dissatisfaction of Fr. San Juan. Response to this appeal was made by the young Antonio de Ciudad Real, then about thirty-three years old, who had come up from Yucatan to recuperate, and who now accompanied his superior on his various tours of inspection to the Franciscan monasteries of Mexico, Guatemala, and Nicaragua. The account of his travels is entitled *Relación breve y verdadera de algunas cosas de las muchas que sucedieron al Padre Fray Alonso Ponce en las Provincias de la Nueva España siendo Comisario General de aquellas partes*.¹ The authorship of the book is ascribed to "two monks, his companions, one of whom accompanied him from Spain to Mexico, and the other, on all the other journeys which he made and in the hardships which he endured." The book, however, appears to have been mostly the work of Ciudad Real, the only one of the two to accompany Father Ponce to Central America.²

On this trip to the south, as elsewhere, Ciudad Real rarely failed to inquire as to the language spoken in every town through which they passed. From the time they reached the Isthmus of Tehuantepec he was especially curious to note whether the local tongue resembled in any way the Maya of Yucatan with which he was so familiar. He must have known some Aztec, but he does not tell us how conversant he was with that language. At least one accomplished nauatlato accompanied the party however. Some of his other companions had worked in the Quiché-Cakchikel area and were well educated in these languages. Also the party was everywhere entertained on their journey by the local missionaries, whether Franciscan, Dominican, or Mercenarian, and these priests usually were able to speak the language of their own pastorates.

On April 1st, 1586, we find Father Ponce and his party traveling through southern Oaxaca and approaching the Isthmus of Tehuantepec. They had been for some days in Zapotec territory (see map 1), but when they reached the miserable thatched huts of Tequiziztlan after a hard night on the road, Ciudad Real did not fail to note that the Indians there spoke a new language called Chontal, although a number of Zapotecs lived among them. In recent years Kroeber has confirmed Brinton's earlier suspicion that this language, like Seri, belongs to the Yuman stock.³ Passing on to Tehuantepec they found themselves again in the Zapotec area which continued through Xuchitlan (Juchitan). On the return journey some months later they passed

¹ In *Colección de documentos inéditos para la historia de España*, vols. 57 and 58 (Madrid: 1872) (2nd edition, 1873).

² *Relacion breve* . . . 1: 287-491, 1873.

³ *Serian*, *Tequi-tlatecan* and *Hokan*. UC-PAAE, 11: 279-290.

much resembles the Zoque, although they have some words of the people of Yucatan." He goes on to say that, "although the Indians of that country have, as above stated, a distinct language of their own, they communicate and traffic with the Spaniards in the Mexican language, because, as has been previously said, this (language) is current as far as Guatemala and Nicaragua and even further on."

This is rather surprising, as the language of Soconusco has always been considered to be Nahuatlán. Only Palacio has mentioned a tongue which he designates as the mother language of Soconusco.⁴

Ciudad Real confirms the use of Soconuscan in every town through which he passed, particularly mentioning Quetzalpalapa, Pixixiapa (Pijijiapan), Mapaxtepec (Mapastepec), Cacalutla, Noconusco (Soconusco), Matzapetlauac, Uitztlán (Huixtla), Ueuetlán (Huehuetán), Copulco, Chiltepec, and Ayutla. No mention is made of Tapachula, but it is possible that the little group of Tapachultecas on the frontier of Guatemala were until recently speaking the language which extended all the way to Tonalá in the sixteenth century. Most of the writers on the subject are agreed that it was closely related to Zoque.

We know very little of the pre-Columbian history of this long narrow district hemmed in between the mountains and the sea. Many of its towns are mentioned in Montezuma's tribute-list,⁵ and Torquemada relates a legend of how the Olmecas once invaded Soconusco and drove the Pipil inhabitants further to the south.⁶ We cannot but believe that the Pipils were earlier invaders of the country. The use of Nahuatl as a secondary language may have been a relic of their occupation. The Zoques are considered to have been among the earliest inhabitants of the mountainous country on both sides of the Isthmus of Tehuantepec, but the intrusion of a Maya element into the language of Soconusco, as noted by Ciudad Real is difficult to explain. Already in Ciudad Real's time the population had declined. "Formerly it was rich and prosperous, thickly populated with Indians and frequented by Spanish merchants, because of the quantity of cacao it produced and the great traffic in this which existed. Now it has very few Indians, who, they say, do not amount to two thousand. The traffic in cacao continues to diminish and passes over to another province further along on the same road to Guatemala called that of the Xuchitepecs." Up on the hills, however, the prosperous Spanish settlers were employing negro slaves on their cattle ranches.

⁴ Quoted in Bancroft, *Native Races*, 3: 760.

⁵ Seler, *Gesammelte Abhandlungen*, 2: 222.

⁶ Torquemada, *Los veinte i un libros i monarchia Indiana* . . . , 1. 332.

Arriving at Tlilapa four leagues beyond Ayutla, Ciudad Real found the Indians speaking a different language, which he neglects to identify for us. He tells us that this was the last town of the Province of Soconusco, but that "these Indians were foreigners who formerly went there for cacao; and when the natives had died out through pestilence and serious diseases, these remained in their houses and plantations of cacao, and thus they have a different language from the remainder of the Province." The newcomers can only have been the Mams, who have spread noticeably on that part of the Pacific coast since Ciudad Real's time. Here we have another example of the tendency of the mountaineers of the Maya stock to descend to the hot lowlands and occupy them when opportunity offered. During the nineteenth century the Kekchis have spread in considerable numbers to the upper basin of the Río de la Pasión and southern British Honduras; and in the same manner in the seventeenth century the Santa Eulalia Indians attempted to settle in the valley of the Río Ixcán, until they were driven back to the mountains through fear of the warlike Lacandones.⁷ The same tendency probably existed long before the Spanish conquest.

The next stop was at Santa Catalina (de Retaluleu), where the Indians are reported as speaking Achi. Modern writers have expressed some doubt as to what the Achi language was, but Ciudad Real explains that it was a general term comprising "four (languages) which are the Guatemalteca, the Tzutuhil, the Kakchikel, and the Utlateca." He evidently applies the name to the entire Quiche-Cakchikel group. Just what he means by the Guatemalteca language is uncertain, but elsewhere he tells us that certain Indians speak "the Guatemalteca, or Achi language, which (in this place) is especially distinguished by the term Cakchikel."⁸

The party proceeded to the capital, now Antigua, by way of Lake Atitlán, and Father Ponce and his secretary afterward traveled extensively in the Quiche-Cakchikel area, visiting the various missions of the order. As the linguistic data compiled by Ciudad Real in this part of the country correspond closely with the conditions described by Stoll during the last part of the nineteenth century,⁹ it is hardly necessary to quote the long list of towns and villages in which the Quiche-Cakchikel group of languages was spoken.

A side-trip to Nicaragua, however, furnishes linguistic data which will be of interest. Leaving Guatemala (Antigua) where Cakchikel was spoken, Ciudad Real encountered at Petapa on Lake Amatitlán a new language

⁷ *La azatlante sotó-Mayor. Hist. de la conquista de la provincia del Itza*, 182

⁸ *Relation breve*, I, 426.

⁹ Stoll, *Zur Ethnographie der Republik Guatemala*, 1884.

which he does not name. He tells us that it much resembled Achi, as he calls the Quiche-Cakchikel group, but that it also contained a number of the Maya words of Yucatan. It is evident that he was describing the Pokomam language still spoken in that locality.

Passing Cerro Redondo and Lago del Pino, they stopped at a village called Los Esclavos, whose people spoke "the corrupt Mexican language which is called the Pipil language." This, he tells us, was a recent settlement occupied by freed slaves whom the government had rescued from their Spanish captors. The village appears on a map of the northern portion of Central America published in Paris in 1754.¹⁰ The party went into what is now Salvador by way of Jalpatagua and Ahuachapan. They did not encounter any villages of the Sinca and Lenca Indians through whose territory they seem to have passed, for they found only the Pipil language spoken all the way to the Lempa river.

A league and a half beyond the Lempa river at a village called Oxucar they found "the Indians of this town and many others of the district speaking a language called Poton, different from Pipil, and from here to a town called Eleuayquin" (Eriguquin) south of the Volcano of San Miguel and west of the San Miguel river. By Poton is evidently meant the Lenca language, which has spread at the expense of Pipil since Ciudad Real's time.

At a hamlet called Nicomongoya on the west side of the Goascoran river (then called Uaxcaran), they entered Mangue territory, which extended for four leagues to Nicaragua, near Nacaome. Still circling the bay of Fonseca, they came to a small village named Ola on the Choluteca river and about a league from Choluteca. It is somewhat surprising to find it stated that here the Ulua language was encountered; and it continued to be spoken in the hamlets and towns through which they passed in the next few miles: Colama, Santiago Lamaciuy, Zazacalo, Condega, and Zomoto. This Ulua area probably ended north of the Estero Real, for close to this point they passed the abandoned site of Olomega, probably a Nauual town, whose inhabitants had moved to El Viejo. At El Viejo they found the people speaking "a corrupt Mexican language. They call it Nauual, and those who speak it, Nauatlato." The same Nahuatl dialect was noted at Chinandega, but a little further on at Mazatega, Chichigalpa, Pozolteca (Posultege), and Cinandega, a language was spoken which Ciudad Real calls Marivio. This can hardly be other than that which is called Maribi and Subtiaban by modern ethnographers. The latter term, in spite of its wide acceptance, is a misnomer if we are to put any credence in the personal observations of

¹⁰ Prévost's *Voyages*, vol. 12. Reproduced in Winsor, *Narrative and Critical History of America*, 8: 262, 1889.

Ciudad Real, who found an entirely different language spoken in Subtiaba. At Yacacoyaua, only half a league northwest of the present city of Leon, the Indians spoke "a language named Tacacho, peculiar to that district." Of Subtiaba, an important city in pre-Columbian times, our traveler tells us nothing except that it was inhabited by Mangue Indians. Less than a mile outside of town a heavy rainstorm had wet the entire party to the skin, and they spent a most uncomfortable night there. The city of Leon was still located on Lake Managua, and it was only some twenty-four years later that it was moved to a site adjoining that of Subtiaba, or Xutiaba, as Ciudad Real calls it. Although the Bishop and Governor still remained at Leon, the Spanish inhabitants were already beginning to desert the city, which was falling to ruin. It is suggested that this state of affairs was a judgment of God on the city because of the murder there of a former Bishop some years before.

Mangue continued to be the language at Mabiti, Nagarote, and Matiara (Matearas). At Managua Naual was spoken; but at Nindiri, Masaya, and all the way to Grenada, Mangue continued to be the speech of the Indians. At Grenada, Franciscan headquarters for Nicaragua, Ciudad Real ascertained that practically all of the Indians under the care of the Order were either Mangue or Naual. One of the islands of Lake Nicaragua is mentioned as having a language different from either of these, but no name is given.

On the return journey to Guatemala a long detour was saved by crossing the bay of Fonseca by canoe. Here it was observed that the island of Cuatpetl had been occupied by Naual-speaking people, but that Poton (Lenca) was spoken on the islands called Quetzaltepetl, La Teca, and Amapala. The Mexican appearance of so many names of localities where other languages were spoken, is probably due to the fact already noted by Ciudad Real: that a large number of these Indians along the Pacific coast were bilingual and communicated with Spaniards and other foreigners in Nahuatl.

The party disembarked at Amapal, a Poton village on the mainland, and following the coast for two leagues arrived at a hamlet called Tzirama, inhabited by Poton and Ulua Indians. Formerly there had been two large towns of these Indians, but the seven families of Tzirama were now all that remained. Four leagues further on, the attractive town of Omonleo was found to be Ulua, and after a journey of still another four leagues they reached the San Miguel river close to where they had crossed it on their way south.

Returning to Guatemala the inspection of the Franciscan missions was completed and late in August Father Ponce and his secretary set out on

the return journey to Mexico by way of Chiapas. The Achi (Quiche-Cak-chikel) language was noted at every stopping-place until Matzatenango, a league from Huehuetenango was reached. Here "they speak a different language called Mame, in which there are some words that are Achi and others that are Mexican; nevertheless it is a language by itself."

The Mam language was noted at Huehuetenango, Chiantla, Cuchumatlan (said to be located on the upper reaches of the Chiapas river), San Martin, Petatlan, and Uitztlán. The description of the route connecting the last three of these towns much resembles Stephens' account of his journey through San Martin, San Andres Petapan, and San Antonio de Guista two centuries and a half later. At Petatlan we are told that "almost all the people of that place speak the Mexican language in addition to their own, and even in their own they have many of the words of (the language of) Yucatan." Huitztlan was the last town in Guatemala.

Four leagues from Huitztlan they crossed the same river which they had observed at Cuchumatlan, here called the Rio de la Canoa; and a quarter of a league further on they arrived at Aquetzpala (Aquespal) in Chiapas, famous for the skill of its canoe-builders. Here a new language called Coxoh was noted. It evidently belongs to the Maya stock, for we are told that the fruit-tree which they call *pil* is the same as the *pich* (*Calliandra portoricensis*, Benth.) of Yucatan. The name, Coxoh, may well be the same as that of the town of Cuxhu, not far from Chicomuselo on the southern branch of the Chiapas river, and it seems more than likely that Coxoh was the sixteenth century name for the language known today as the Chicomucelteca. Ciudad Real reports the same language as spoken down the river at Izcumtenango and at Coapa, six leagues south of Comitlan. Anything connected with the Chicomucelteca is of interest, as it has been considered by some investigators as being the language most resembling the Huasteca.

At "Comitlan" the Indians are said to be Quelemes, a nomenclature which, Oliver LaFarge writes, has never been satisfactorily defined but seems to be generally accepted as Zotzil. Chaneabal is spoken around Comitlan today, and if this has always been the case, then Quelem like Achi would be a general term and include more than one language. In Maya Quelem means a vigorous young man capable of going to war. Herrera also states that Comitlan was a Quelem town.¹¹ The route continued through a number of towns designated as Quelem: Amantenango, Teopisca, Chiapa of the Spaniards (San Cristobal), Zinacatan, and Ixtapa.

The Dominican Father in charge of the three Coxoh villages through

¹¹ Hist. gen. Dec. 3, book 7, ch. 1.

which they had passed gave the party an interesting account of the Lacandon Indians, their stronghold on an island in a lake, their raids on the Spaniards and converted Indians, and their manner of fattening their captives for sacrifice in wooden cages. The entire story recalls to mind Gerónimo de Aguilar's account of the fate of Valdivia and his companions in Yucatan, some seventy-five years before. The Dominican's informant was a christianized Indian who had only recently escaped from one of these cages. The fact that this Indian captive, who belonged on the outlying ranch of one of the Spanish residents of San Cristobal, was able to overhear and understand the remarks of his Lacandon pursuers when he escaped, brings up anew the vexed question as to whether these sixteenth century marauders are to be identified with the Lacandones of today who speak Maya, a language hardly intelligible to any of the Chiapas Indians. On the other hand we know that the Christian Indians who accompanied the famous expedition into the Lacandon country a century later, had more or less trouble making themselves understood. It is possible that the sixteenth century Lacandones included both Chol and Maya speaking Indians.

At Chiapa of the Indians, the modern Chiapas, Ciudad Real states that they speak "a language which they call *Cendal*." Whether this was the local Nahuatl name for Chiapaneca, or whether it is simply an error, the writer does not feel competent to state.

Tuxtla was the next stop, and here the party found they had reentered the Zoque area. Zoque was spoken at Jiquipilas, Tlapanaltepec (Tapana-tepec), Tonaltepec, Zanatepec, Oztutla, Necteppec, and Yiloztepec. Three leagues further on, at Ixtaltepec, Ciudad Real noted that they had finally returned to the Zapotec country.

In many respects Ciudad Real's observations will be found to differ considerably from the data compiled by modern ethnographers, and it is possible that his credibility may be questioned. It should be noted, however, that he rarely mentions the language of any locality which he did not visit himself.

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POTTERY ON THE MIDDLE COLUMBIA

By VERNE F. RAY

THE manufacture and use of a crude type of pottery in a region removed by several hundred miles from the nearest "pottery area" came to light in the course of field work conducted with the Sanpoil Indians during December, 1929, under the auspices of the Department of Anthropology of the University of Washington.

The Sanpoil is a small tribe of Salish speaking people living at present on the Colville reservation in northeastern Washington. Before the coming of the whites they occupied the territory on each side of the Columbia river from about forty miles below the mouth of the Sanpoil river to a point about the same distance above. They spoke a dialect closely related to that of the Colville on the north and the Okanagan on the west and intermingled freely with these peoples, especially the former. Culturally they were a typical Plateau tribe.

The informant who furnished the following information was a Sanpoil shaman whose English name was John Tom. He died on March 1st, 1930, aged over ninety years, the oldest member of his tribe. Throughout his life he lived within the old tribal territory. After the establishment of the reservation he made his home near Keller, Washington, a small village on the reservation. Concerning the various uses of clay that he described, he spoke for his own tribe only. He knew of no similar practices by "outside" tribes such as the Lakes (Senijextee), Columbia, and Nez Percé, nor had he heard of the use of pottery by more remote tribes.

The first suggestion of the use of clay by the Sanpoil came in answer to a question regarding the material used for the core of the ring employed in one of the hoop and pole games. The game concerned was the variety in which a small ring is rolled along the ground and against a small log used as a buffer, the pole being thrown after it on the rebound. John Tom's first answer was that iron was used, since it was desirable to have a heavy ring. Questioned further as to what was used before iron became available he answered without hesitation: clay. Damp clay was molded into a small ring two or three inches in diameter and before completely dry was wrapped tightly with damp or green rawhide in two or three layers. After the rawhide had dried and contracted the ring was tough and rigid and of sufficient weight.

John Tom revealed, upon further inquiry, that at least one type of clay pot, always supplied with an outer covering of fish skin, was made and utilized in former times. It was not used for cooking, but solely for carrying

water. Firm white clay, easily available along the banks of the Columbia river, was dug for making pots. Other clays were also plentiful but proved inferior to the white mud for this purpose. Pots were always built up in a form. The ordinary method was to dig a small pit in the firm sands along the river bank conforming in shape and size to that desired for the pot. The clay, after being worked to the proper consistency by mixing with water, was smeared about inside the pit to the thickness of about three-quarters of an inch. After roughly applying the clay in this manner the inside was smoothed carefully with the hand. The vessel was then left to dry in the sun. A thorough drying was accomplished in a short time since the heat becomes quite intense along the river valley during the summer and the sands are correspondingly hot. When completely dry the pot was removed from its place in the pit. The particles of sand adhering to the outside were scraped off with a sharp edged stick, leaving a fairly smooth outer surface. Unusual irregularities were corrected by moistening the uneven portions and smoothing with the hand. This completed the building of the pot proper. Firing was never practiced so far as John Tom's information went. He stated that pots would crack if allowed to get too hot. Hardening seems to have been satisfactorily accomplished by the heat of the sun alone.

A cooking basket was occasionally substituted for the pit in the sand in which to form the pot. It was necessary to select a basket with a fairly smooth inner surface or it would be difficult to remove the pot. In addition, it had to be turned out before thoroughly dry to avoid sticking to the basket.

A pot was never complete without a covering of fish skin. This was added for strength, to prevent cracking and possibly to render the container more waterproof. The skin of the white or silver salmon (*Oncorhynchus kisutch*) was utilized for this purpose. A green or dampened skin was carefully cut and sewn to fit closely around the vessel. Tightly rolled sinew from the leg of the deer served as thread. The covering extended over the upper edge and down on the inside for an inch or two. Near the top of the pot two or three small holes were made, extending through the outside covering, the clay, and the inside projection of the skin. Through these holes rawhide thongs were threaded and knotted on either side. These served to hold the covering in place; they were not used as places of attachment for a handle since such was never supplied. In drying the skin tightened; the vessel was then ready for use.

The commonest shape in which clay vessels were made was identical with that of the typical cooking basket; elliptical in cross section, tapering gradually from top to bottom.¹ Such vessels were seldom built as large as

¹ Dr. Leslie Spier points out that here we have a striking example of continuity of pattern

cooking baskets, however, the depth was often as little as eight inches.

As stated above, these vessels of clay were used exclusively for carrying water; they were always soon emptied for they were not capable of holding water over longer periods of time than twenty or thirty minutes without damage.

Clay pots of the type described were in common use at the time when John Tom was a boy. He learned the details of their manufacture from his mother who made such a vessel and used it for some time during his youth. They gradually fell into disuse while he was in his 'teens, at which time metal buckets were introduced by the Hudson Bay Company.

Clay was also used for making the heads of children's dolls. These were rudely molded and attached to bodies of tulle or, later, cloth. Clay was never utilized for pipes, which were of stone.

The Sanpoil tribe was situated virtually in the center of an area hitherto considered as devoid of pottery. In California the use of pottery has been recorded for as far north as the Foothill Yokuts-Mono and archaeologically for the Sacramento delta. The Klamath and Northern Paiute of Oregon made a limited number of articles of clay, but did not make vessels of this material. The northernmost extension of pottery in the Plateau area was among the Northern Shoshoni of central Idaho. On the east the margin was marked by the Rocky mountains where it was probably used by the Blackfoot Indians. To the northeast of the Sanpoil the nearest instance of pottery making was by the Sarsi of Alberta. From the Sarcee to the Pacific coast we find a gap, and proceeding up the coast it is not until we reach the Eskimo of southern Alaska that pottery recurs.

The extensive information gathered by Dr. Gayton concerning pottery making by the Yokuts and Western Mono² modifies considerably the previously conceived boundary for that trait. Still farther north, in the vicinity of Lodi, California, Dr. Nordenskiöld and Mr. Dawson found remains of a rudimentary form of pottery on an archaeological site. Of these finds Dr. Nordenskiöld says:

The Indians that once inhabited the dwelling site near Lodi possessed no clay vessels for cooking their food in, but neither did they have any stones for "stone-through three mediums. The wooden box of the Northwest Coast is generally considered to have determined the squarish elliptical shape which is characteristic of the cooking basket of that area. As applied to basketry, however, this pattern did not remain confined to the area of the wooden box, but spread over a much wider range including a large part of the Plateau area. In the present instance we find the same semi-square form carried over to the manufacture of vessels of clay.

² A. H. Gayton, *Yokuts and Western Mono Pottery-Making*. UC-P.A.M., 24. 239-251, 1929.

boiling." No stones of that kind have been discovered in the mound. But this method of cooking was, however, nevertheless known to them, only that instead of stones they used balls of baked clay. Of such there are hundreds to be found in the excavating of the mound. Fragments of these occur in thousands. . . .

These objects did not, however, constitute our most important finds in the Lodi mound, but instead certain fumbling attempts at forming the balls just referred to into small bowls of burnt clay. These are however only quite small, and cannot be supposed to have served for anything beyond cups for holding paint, or such like. . . .³

To the north and east, in Oregon, Dr. Leslie Spier discovered the use of clay for dolls, pipe bowls, etc., by the Klamath and Paiute. He says of the Klamath:

Their [little girls'] dolls are made of clay with modeled eyes, nose and mouth, but are not dressed.

Also:

Such [pipe] bowls are usually of clay (spau'wan) according to my information but sometimes of stone. . . .

And of the Paiute:

The Northern Paiute [of Oregon] make clay figurines representing horses and other animals, corrals, etc. according to my informant. The Klamath did not.⁴

This data on the use of clay brings us into the Plateau area and a step nearer the Sanpoil. Since the Klamath and Oregon Paiute occupy territory intermediate between the California pottery makers and the Northern Shoshoni, a possible connection is implied. However, the Northern Shoshoni, who made actual vessels of clay, lie nearer to the Sanpoil.

Dr. Lowie states, concerning the utilization of pottery by the Northern Shoshoni:

"Cō'go-wī'towE," earthen pots, were referred to by several of my informants, and an old woman professed to have seen some in her youth. The existence of pottery is affirmed by Lewis [1805-6], who speaks of "pots in the form of a jar made either of earth, or of a white soft stone." Still more explicit is a statement by Ross [c. 1810], who pronounces the Shoshoni the best of western potters. "The clays to be found all over their native soil are of excellent quality, and have not been overlooked by them." Reference is made to cylindrical kettles and water-jars with stoppers, which were also used for holding fish, oil and grease.⁵

Further evidence for the use of pottery in this area has been revealed

³ Erland Nordenskiöld, *Modifications in Indian Culture through Inventions and Loans*, Comp. Ethnol. Series, 8, 35-36 (Gottborg, 1930).

⁴ Leslie Spier, *Klamath Ethnography*, UC-PAAE, 30, 1-338, 1930.

⁵ Robert H. Lowie, *The Northern Shoshone*, AMNH-AP, 2, 177, 1909.

through the archaeological work of Mr. Schellbach in and about the Snake River canyon of central Idaho. A preliminary report on his work states:

The artifacts include a type of pottery hitherto unrecorded in this region, and it differs in form from the pointed base vessels of the Paiute to the south. It is a plain, coarse ware, with flat bottom and with a rim of greater diameter than the base. Shaped like an inverted truncated cone, it is devoid of neck or shoulders, but is provided with a flange around the base.⁶

This trait was not practiced by the Northern Shoshoni in common with all other Shoshonean peoples, however. The Ute and Paiute also made pottery, but the Wind River Shoshoni and the Paviotso, both south of the Northern Shoshoni, did not.⁷ Thus, so far as our present information is concerned, central Idaho represents a somewhat isolated extension of the southern area.

It appears very unlikely that pottery reached the Sanpoil by way of the Shoshoni. The distance separating the two tribes is about 350 miles, however, the actual degree of isolation of the two tribes is quite inadequately represented by the distance in miles. The intervening territory consisted of desert and mountain wastes and was peopled by hostile tribes speaking unintelligible languages. Very little intercourse existed, the Sanpoil today speak with extreme vagueness of "the country beyond the Nez Percés."

Dr. Wissler doubts the reliability of his data concerning the former use of pottery by the Blackfoot. In his book, *The American Indian*, he says that certain early information for the Ojibway, Cree, and Blackfoot westward from Winnipeg, indicates that they made pottery. . . . We see that its extension out into Saskatchewan and Alberta is coincident with the distribution of Algonkian-speaking tribes: the Blackfoot, Cree and Ojibway.⁸

However, in the paper in which he presents his source material from the Blackfoot he states:

It is not certain that the Blackfoot ever made pottery, though some individuals claim such information to have been handed down to the present generation. An old woman heard that cooking pots were once made of pulverized rock and some sticky material. She never heard of pots hollowed out of stone. A man had heard that pots were made a long time ago. They were fashioned of mud and sand. A bag of rawhide was filled with sand, greased on the outside and the pot shaped over it. The sand was then poured out and the bag withdrawn. The pot was filled with fat and hung over the fire to harden. When finished, it was tested by boiling water in it. Such pots grew gradually harder with use. They were supported by a rawhide cord passing around the rim. The cord had to be changed often. He also heard that pipes were formerly made of clay and hardened by holding over the fire. During

⁶ Mr. Schellbach's *Researches in Idaho* (MAIH-IX, 7: 123, 1930).

⁷ Robert H. Lowie, *Notes on Shoshonean Ethnography*, AMNH-AP, 20: 226, 1924.

⁸ Clark Wissler, *The American Indian* (2nd ed.), 66, 68, 1922.

this operation they were always kept rubbed with fat. Aside from these narratives, there is no evidence that pottery was used by the Blackfoot. That these statements may represent intrusive traditions is suggested by their seeming parallels among the Gros Ventre and certain striking agreements with processes employed by the Mandan and other village Indians.⁹

Also:

Blocks of hard tough clay were cut into the form of a pipe bowl, rubbed with grease and hardened over the fire and by use. This is in agreement with the tradition concerning pottery but seems unlikely.¹⁰

The Sanpoil were not unacquainted with the Blackfoot in aboriginal times. Occasional trips were made across the Rocky mountains for the purpose of hunting the buffalo, especially after the introduction of the horse. The destination was usually the country of the Flathead but the territory of this tribe was contiguous with that of the Blackfoot. The air line distance between the Sanpoil and the Blackfoot was approximately 350 miles, or about equal to that separating the Sanpoil and the Shoshoni. The actual distance was considerably greater due to the mountains. However, unlike the route to the Shoshoni, the course here followed was well traveled; it followed the Columbia river for some distance and remained in Salish territory the whole way.

Despite all this, a comparison of the techniques of pottery manufacture employed by the Sanpoil and the Blackfoot discredits an historical connection here. The processes of pot formation are exactly reversed in the two instances. The Sanpoil built up the pot in a pit dug in the sand, or in a basket, while the Blackfoot formed it on the outside of a bag of rawhide. Also the Blackfoot probably cut articles such as pipes from blocks of hard clay, but the Sanpoil definitely did not know this technique. Although this is negative evidence, it may be of some significance.

To the north and east of the Blackfoot, between the headwaters of the Athabasca and North Saskatchewan rivers, lived the Sarsi Indians. Information obtained by Dr. Edward Sapir and Mr. D. Jenness definitely establishes that this tribe used pottery.¹¹ Moreover, the Sarsi are an Athabascan speaking people, therefore the peripheral distribution of pottery at this point is no longer restricted to Algonkian speaking tribes.

Dr. Sapir reports:

In the summer of 1921 Mr. D. Jenness learned from a Sarcee Indian named Otter that originally his people used clay pots the manufacture of which they had been taught by the Maker. Iron pots were introduced at the same time as horses. To

⁹ Clark Wissler, *Material Culture of the Blackfoot Indians*. AMNH-AP, 5: 26, 1910.

¹⁰ *Ibid.*, 83.

¹¹ Edward Sapir, *A Note on Sarcee Pottery*. AA, n.s., 25: 247-253, 1923.

make a pot the clay was kneaded and hollowed out by hand. After it was shaped and dried in the sun, it was laid with its mouth towards a fire where the smoke would permeate it. This saved it from cracking. It is not entirely clear from this whether the pot was properly fired or consisted merely of a dried and smoked clay.¹²

Further data indicating the use of a fully fired pottery were obtained by Dr. Sapir from two other Sarsi Indians. Clay pipes were used as well, and images were modeled from clay to serve as toys for children. Archaeological evidence confirms the testimony of the native informants. Two specimens of clay vessels unearthed in Alberta are now in the Victoria Memorial Museum in Ottawa.¹³

Only 300 miles separated the Sarsi from the Sanpoil. Moreover, most of this distance lay along the much used Columbia trade route. The Sarsi were one of the most southerly of the northern Athabaskan peoples. Since the adjacent territory was Salish, language probably did not prove much of a barrier to intercourse. In addition to these general considerations we find specific resemblances in the pottery itself. Most significant is the use of unfired pots by both tribes. The presence in each instance of this somewhat radical departure from ordinary practice in pottery making materially strengthens the likelihood of historical connection. Since the trait would presumably have traveled south to the Sanpoil we might well expect to find the Sarsi using both fired and unfired vessels and the Sanpoil possessing only the cruder type, or unfired ware, which is, indeed, the case. Then, too, each tribe made children's playthings of clay.

It is with the pottery of the Sarsi, then, that we can link that of the Sanpoil with the least possibility of error, if we are to assume a linkage. It must be remembered that the clay vessels of the Sanpoil were definitely unique, first, in construction—that is, in the use of a pit¹⁴ or basket in formation and the utilization at all times of a covering of salmon skin—second, in shape, being uniformly patterned after the cooking basket, and third, in function, serving as containers for water in opposition to the ordinary use as cooking pots. The problem of accounting for the presence of pottery in this isolated region, to be sure, remains for the future. The desideratum is further work in the surrounding territory, especially to the north. Only then will an interpretation of value be possible.

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¹² *Ibid.*, 248.

¹³ *Ibid.*, 248-9, 252.

¹⁴ The Okanagan, adjoining the Sanpoil on the west, dug pits in the clay, in emergency cases, in which they cooked their food by the stone boiling method. They may also have made pipes of clay at one time (James H. Teit, *The Salishan Tribes of the Western Plateaus*. BAE-R, 45, 230, 1927-1928.

ELSDON BEST

By QUINTIN POPE

ELSDON BEST, most famous of New Zealand anthropologists, and one of the best known of anthropological field workers in the world, died in Wellington, New Zealand, last September at the age of seventy-five.

He was a man of roving disposition, having worked as land surveyor, served in the armed constabulary during the fierce native land wars in New Zealand, been a cow-puncher, lived in the Hawaiian islands, felled redwood in California in the early eighties, ranched in the Sierra Nevada, worked in Missouri, Kansas, Oklahoma, and Texas, and lived for a year in New Orleans. Ranching in New Mexico, he took part in the Indian wars and returned to New Zealand in 1886. An accomplished woodsman, he brought the whole of his experience to bear when given a post in the Native Lands Department. From this he was appointed to the post of ethnologist at the Dominion Museum.

For more than fifteen years previous to this last appointment he had lived among the primitive Maori, and had learned their language as well as their habits of thought. For one period of two years, so remote was he from civilization, he did not see a white man or hear a word of English. His only link with the outside world was through newspapers brought over many miles of almost trackless country.

On his return he became a member of the Museum staff. During this part of his life he wrote many books, of which the Board of Ethnological Research has published most. His works include: *The Maori* (in two volumes); *Fragment of the History of the Tuhoe Tribe* (over 1000 pp.); *Games and Pastimes of the Maori*, *The Pa Maori*; also books on fishing, agriculture, religion and myths, and other phases of primitive life.

In 1914 he was awarded the Hector Medal for research, the award being made by the New Zealand Institute. He was also elected a Fellow of the Institute.

In 1892 he became one of the founders of the Polynesian Society.

At the time of his death, Mr. Best had completed two more books, which are in press.

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BOOK REVIEWS

METHODS AND PRINCIPLES

Origin and History of Politics. W. C. MACLEOD. (John Wiley and Sons, Inc., 1931 xv, 503 pp. Price \$3.75.)

For many centuries men have been interested in the origin of political institutions, and various theories have been advanced, usually for the purpose of supporting some preconceived idea of the nature of the state or of justifying or attacking political authority. Only recently has any scientific attempt been made to investigate the actual historical origin of the state, and the chief contributions to this study have been made by students of anthropology. This represents an interesting example of the present tendency to integrate the social sciences, each special discipline using much of the data and methods of the others.

In discussing the origin of the state, the author gives particular attention to the theory that the state originated, through violence to the part played by primitive religion and kinship in state origin, and to the theory of economic determinism. The author attacks the theory that the state originated through conquest, holding it to be the weakest of the various theories of state origin. He agrees with many writers who point out the connection between the religious authority of magicians and the political authority of chieftains, but holds that this theory has claimed too much, since political authority has existed prior to religious power. He also points out the weakness in the widely held theory that political organization grew up on the model of the family organization. The theory of regular economic stages, through which society has progressed, each stage being accompanied by its peculiar type of political organization, is also given critical consideration. In general, the author adopts an eclectic theory of state origin, believing that many causes, differing in different times and places, contributed to the beginnings of political organization.

In discussing the evolution of the state the author draws material from history. But he avoids the error of finding historical laws and causes in single instances, and attempts, instead, to compare the experiences of mankind under similar conditions in many times and places. For example, he compares the feudalism of Europe and of Japan, the empires of China, Rome, and the Incas and the system of representation among the Iroquois, in Athens, in the republic of Venice, and in modern France and England. This is a more scientific method of historical comparison than is used by many writers, and gives a valuable background to the study of contemporary politics.

The volume is a valuable interpretation of political science from the point of view of cultural anthropology and should prove useful to all students of the origin and development of the state, as well as to those interested in comparative government. It throws light on many present-day problems by showing the nature of their evolution and the attempts at their solution in the past.

RAYMOND G. GIFFILL

A Bibliography of Sex Rites and Customs. ROGER GOODLAND. (London: George Routledge & Sons, Ltd., 1931. 752 pp. 63s.)

This useful book has the ambitious subtitle "An Annotated Record of Books, Articles and Illustrations in All Languages." The arrangement of the 9000 items in the bibliography is by authors alphabetically listed. These are cross referenced by an adequate index. Thus, if one wishes to learn about sterility remedies and customs, the index gives an alphabetic list of the hundreds of authors who have touched on this subject. The references to countries and peoples are similarly assembled in the index; e.g. Japan and Egypt.

The author and publisher are to be congratulated on this fine piece of work.

Anthropological literature has become so vast that it is to be hoped that similar bibliographies for other phases of the science will in time be forthcoming from the pens of various specialists.

E. W. GIFFORD

Das Eingeboreneneuropäer. Vol. 2, containing Togo, Kamerun, South-West Africa, and the South Sea Colonies (Micronesia, Papua, Melanesia, Samoa). E. SCHULTZ-EWLRTH and LEONHARD ADAM. (Stuttgart, 1930. viii, 728 pp.)

In this volume, the remaining portion of the material collected by the German Colonial office between 1907 and the outbreak of the war is made generally available. The first volume, issued in 1929, dealt with German East-Africa, and was reviewed in the *American Anthropologist*, n. s., 32, 666, 1930. As there stated, the material was collected under the particular encouragement and support of the German colonial administrators by every type of observer that was available. Preference was of course given to trained ethnologists, but even untrained ones had the advantage of a questionnaire carefully prepared by Josef Kohler and were specifically instructed in the methods of using it. The chief credit both for the plan and its public approval in a Resolution of the Reichstag is, however, due to the efforts of Felix Meyer.

The result is that material of first rate importance is thus permanently preserved. And this material is in no sense purely legal, as we understand it in England and America. Economics and political science as well as sociology are regularly part of the law-school curriculum in Germany, and accordingly in these two volumes, economic and social data play at least as great a part as those which would be called strictly juristic. We may see the great advantage of so systematic an attack on this essential problem by contrasting these results with the paucity of such material obtained in North America, where archaeological, linguistic and cultural prepossessions have pushed the acquisition of economic data into the background and perhaps caused their irretrievable loss.

Since the tribes discussed are both diverse and widely sundered, each geographical group is separately treated. The Togo material is treated by A. Schlettwein, Kamerun by Julius Lips, Herero by B. v. Zastrow, three Bushmen divisions by Max Schmidt, and the rest by v. Zastrow and H. Vedder. Micronesia was as-

signed to H. Trimborn, Samoa to the editor, E. Schultz-Ewerth, and Papua and New Guinea to Professor Richard Thurnwald, whose labors on these topics have been especially fruitful. Thurnwald has largely supplemented the officially gathered material by his own investigations, as was also done by v. Zastrow and Vedder in the case of the Bushmen.

Obviously a book of this sort partakes of the nature of an encyclopedia and the two indices make it possible to use it for this purpose. Excellent bibliographies for each section give an additional value to the work. It will thus become a source of prime importance for anthropology, as for comparative law.

The search for customs or rules of universal obligation still continues to be one of the most important tasks of ethical empiricism. Because of the inevitable gaps in the material, a negative generalization is scarcely permissible, but from the material here collected we can still say that there seems to be no tribe in which the intentional killing of a tribesman is not furnished by a sanction of some kind. Generally, the sanction is the vengeance of the victim's kindred, which, we may recall, is also the only sanction in the earlier stages of Old Testament society, as it remained the only sanction in many Greek communities until well into historical times.

An important exception to a general prohibition of mother-son incest is reported from the Kai people in Papua (p. 650), but it is not certain whether such cases are merely extremely rare violations of a rule otherwise observed.

It is hardly necessary to repeat the general commendation already given to a work so carefully prepared and so admirably presented.

MAX RADIN

Methods in Social Science: a Case-book. STUART A. RICE (ed.). Compiled under the direction of the Committee on Scientific Method in the Social Sciences of the Social Science Research Council. (Chicago: The University of Chicago Press, 1931.)

Inquiry in the social sciences during the last decade in the United States has been characterized by dissatisfaction and unrest, emanating in part from men who have regarded themselves as belonging to the younger generation of scholars. In 1924, for example, a group of economists, feeling that the contributions of their predecessors "were of doubtful value," published *The Trend of Economics* (edited by R. G. Tugwell), a collection of essays—"a sort of manifesto of the younger generation,"—in which each contributor expressed "what he had on his mind concerning economics." This was followed in 1925 by a similar volume, *The History and Prospects of the Social Sciences* (edited by H. E. Barnes), compiled by ten representatives of ten specialized fields of humanistic inquiry, in which it was proposed by "frank and candid" assessment of history, geography, biology, social psychology, cultural anthropology, sociology, economics, political science, jurisprudence and ethics, "to bring the social sciences up to something like the same level of development and objectivity which have . . . been attained by the natural and applied

sciences" In 1927 another group of thirty-four specialists, disturbed by the intellectual particularism and isolation of their thirteen fields, published *The Social Sciences and their Interrelations* (edited by W. F. Ogburn and Alexander Goldenweiser), a volume of essays purporting to present "an integral picture of the present interrelations of the social sciences." Again in 1929 ten sociologists, observing that "sociology means many things to many men," combined in *Trends in American Sociology* (edited by G. A. Lundberg, Read Bain, and Nels Anderson) to set forth what "in the opinion of . . . younger workers" were the "domains and methods" of the study. And finally in 1931 forty-eight analysts, chosen largely from among the younger statisticians, geographers, anthropologists, sociologists, political scientists, and economists, many of whom had already expressed themselves in one or more of the previous volumes, published *Methods in Social Science: a Case-book*, in order to portray "the present state of methodology in the social sciences" (p. 733). In other words, an American youth movement has made itself clear on two points. It has tacitly dismissed the possibility that any single mind, however well-endowed, can arrive at a synthetic statement of the problem, content, and method of the social studies. But it has implicitly assumed that when the separate efforts of many individual minds are brought together in spacial juxtaposition between the covers of one book, synthesis is by that act achieved.

To what extent does *Methods in Social Science: a Case-book* support this sanguine confidence in the committee-system of inquiry? To what extent may the reader of its eight-hundred odd pages, embracing fifty-two separate essays, eight appendices, and three indices, anticipate a clarification of concepts and increased control over materials? It is the opinion of the reviewer that, if the reader is not already soundly informed upon the broader philosophical and historical background of methodological ideas he had better lay the book aside. For the very "method" employed by the supervising committee for the delineation of method in the social studies was the product of a compromise arising from philosophical and historical uncertainty. And its outcome in publication is a volume bearing the marks of haste, immaturity, and misapprehension.

The evidence of haste appears on every page of Appendix A, *The History and Organization of the Case-book* (pp. 731-739), in that the members of the Committee on Scientific Method in the Social Sciences of the Social Science Research Council were, from the beginning, unable to agree upon a definition of method or a distinction between method and technique. It is also apparent that in the presence of this disagreement, the statisticians, who formed the majority of the committee's membership, easily secured the adoption of the statistical technique of sampling. This, in application to the problem of the portrayal of method, meant first, that seven committees of seven of the constituent societies of the Social Science Research Council, unguided by a uniform concept of method, were asked to choose from the literature of anthropology, economics, history, politics, psychology, sociology, and statistics approximately fifty significant contributions of method-in-use; second, that these fifty samples of methods-in-use were placed in the hands of fifty interpreters of method, who were also unguided by a uniform concept of method; third,

that these fifty samples of interpretations-of-methods-in-use were published. In short, although the title of the supervising committee implies the employment in the social sciences, as in the natural sciences, of but one scientific method, the failure of the compilers of the *Case-book* to agree upon a concept of method resulted in the publication of a nebulous medley of interpretations of a plurality of methods. It also resulted in an editorial attempt to unify the medley for the reader by warning him to look for three mythical methodologies, (p. v.) namely, that of the nine members of the committee responsible for planning the study (who had never agreed upon a concept of method); that of the fifty or more method-users (whose selection had been made in the absence of conceptual guidance by the planning committee); and that of the fifty or more interpreters-of-methods-in-use (whose interpretations represent a possible maximum of fifty or more conceptions of method).

The evidence of immaturity and misapprehension appears in the classification devised for organizing the interpretations-of-methods-in-use for publication. In dealing with those descriptive of statistical techniques, the editor, a statistician, was obviously at home. The studies of quantitative relationships are grouped in appropriately titled categories. But in dealing with the descriptions of procedures employed in the reconstruction of the past, which form by far the largest number of interpretations, he is usually awkward and often fantastically in error. No consistent attempt is made, for example, to distinguish by taxonomic device between the procedure of the historian who reconstructs the past in terms of a dated series of events, and the very different procedure of the student of cultural change whose recovery is based upon developmental presuppositions. Materials involving temporal sequences, whether historical or developmental, are scattered without rhyme or reason, through five different categories, and stand side by side with materials which have no relation whatever with inquiries involving the study of change or the recovery of the past. Indeed, the editor's familiarity with such matters is so slight that he subsumes three discussions, one of which is expressly designated by the author as non-developmental in character (p. 297), under the classificatory barbarism "Interpretations of Change as a Developmental Stage" (p. xi). He cites the Darwinian theory as the source of the anthropologist's "discovery" of cultural stages (p. 9), and he confuses simple comparison with the comparative method (p. 786).

As for individual interpretations-of-methods-in-use, many are excellent. As for individual examples of methods-in-use selected for interpretation, many possess the greatest methodological significance. What student of procedure in the social sciences could wisely deal with his subject without consideration of the place and influence of Auguste Comte? What student of the methodological assumptions of the historian, the statistician, the anthropologist, the psychologist, the economist, could overlook Voltaire, Troeltsch, Mitchell, Pareto, Sapir, Kofka, Jevons, or many others included in the *Case-book*? Who is there who will now deny that Bury's history of the idea of progress isolates for inspection a principle of organization underlying all contemporary humanistic inquiry? But what, in all conscience,

is to be gained by the blind and accidental selection of materials spread in time over two centuries which endows Comte and Comte's youngest twentieth century imitator with the same methodological significance; which includes in the same category an environmental analysis of the production and marketing of California raisins and an endeavor to achieve a cultural sequence on the basis of archaeological documentation? What can the student who desires to perfect his procedure in studying man learn from an inquiry into method which fails to recover the fundamental problems humanists have set up for solution and which ignores the necessity for the reconstruction of the intellectual and social situations which have called forth methodological departures?

In a word, no procedure for the portrayal of the "present state of methodology in the social sciences" will free the subject of the confusion of which the Case-book is so eloquent an example, which does not acknowledge that twentieth century inquiry in the study of man functions with reference to a traditional set of problems and a traditional set of methodological ideas. These can be recovered, apprehended, and valued for future investigation, not by analysis and "interpretation," but by arduous historical inquiry. If such historical investigation be too exacting for the younger generation of scholars,—if, committed to the group-system of compilation, they persist in random sampling and rapid essay-writing, a solution of the difficulties confronting the student of man will have to be postponed, and synthesis in the social sciences left where the American youth movement has already lodged it, in the hands of printers and bookbinders.

MARGARET T. HODGEN

Leitfaden der Anthropologie. K. SALLER. (Berlin: J. Springer, 1930. 284 pp., 128 ills.)
Augenfarbentafel. K. SALLER (The same.)

A work like this evokes astonishment and admiration at the power of condensation of a vast body of knowledge to which German scholarship has trained itself. To the reviewer it is impossible to conceive of a work of this sort being produced in England or America; a corresponding monograph would have been two or three times as long, or two or three times as thin in content. References are not to the capacities of the English language, but to a mental method of approach. In consequence, the book is hard reading. Unwavering in its determination to present a maximum both of fundamentals and detail, in compensation it is a valuable work of reference. In much briefer compass it deals with nearly everything covered in Martin's *Lehrbuch*, besides providing orientation in most of the fields underlying physical anthropology, such as cytology, genetics, statistics, etc. So far as the reviewer is able to judge, the treatment is always thoroughly sound. Dr. Saller is certainly to be admired for his range of knowledge and faculty of organization and compression.

Supplementary to the *Leitfaden* is a laboratory and field use chart of 40 eye colors.

A. L. KROEBER

L'Ologénèse, nouvelle théorie de l'évolution et de la distribution géographique des êtres vivants. D. ROSA, (Paris: Alcan, 1931. xii+368 pp.)

Hologenesis, as conceived by Rosa, whose paper on the Progressive Reduction of Variability is familiar to most evolutionists, is the doctrine that "evolution is accomplished by following dichotomously branching lines and that each species is predetermined in the preceding species as the individual is predetermined in the egg." The theories, therefore, that evolution is caused by natural selection, or by the influence of environmental factors, are rejected by the author, who holds instead that the whole process results from the operation of internal factors. These factors cause a species to divide into two branches (not more) as a result of endogenous doubling of determinants. Like Nageli, who has attributed evolution mainly to internal causes, Rosa is not a teleologist, his principle is supposed to act mechanically, and to produce by a kind of fatality all the marvelous adaptations of the organic world. Fundamentally the cause of adaptation is "the internal harmony of the idioplasm." This, again, is due to a "law" which just causes the idioplasm to act that way. But when the author comes to consider adaptations to the outer world he calls the principle of natural selection to his aid, although he maintains that it is one of really subordinate importance.

As a whole, the volume is highly speculative in character. Little reference is made to modern genetics and its bearing on evolutionary theory. The book is of a type which was much more prevalent in the early post-Darwinian period than at the present time, when armchair speculations are much more at a discount.

S. J. HOLMES

NORTH AMERICA

Uncle Jeff's Story. A Tale of a San Joaquin Valley Pioneer and his Life with the Yokuts Indians. F. F. LATTA, ed. (Tulare Times Press, Tulare, California, 1929. 88 pp.)

Mr. Latta has secured and arranged the reminiscences of a pioneer settler in the San Joaquin valley. Between the ages of 8 and 18, from about 1851 to 1861, the informant lived most of the time, and for several continuous years, away from his white relatives, among the Choinimni tribe of Yokuts. His memory remained clear until his death in 1928. There is, of course, little on society and religion; but what a boy might note in regard to ways of daily life and material culture is reliably recalled. At any rate, so far as it covers the same points inquired into by modern ethnologists, the account checks thoroughly. There are also a considerable number of new details. Some of the ethnographic points of interest are: hoop and pole game with a large hoop of bark coiled into a disk, a similar game with a perforated stone; cigarette-shaped pipes of cane, smoking of seeds instead of leaves of tobacco, the seeds being ground in a mortar, houses thatched with rushes (not mats), the framework centering in a willow hoop at the top; granaries raised on posts; leaching of acorn meal with hot water in a sand basin, eating food with three fingers, musical bow

smaller than the hunting bow; conical baskets open at the peak clapped down over fish; rush balsas of three bundles up to 50 feet in length, milkweed used for string and chewing gum, breech-clout worn; no foot covering; pigeon snaring from blinds, cradle framework on U-shaped withe; rabbit nets; straight (?) throwing stick for rabbits; on Tulare lake, houses covered with rush mats, both sewn and twined, lake balsas wide and flat with a hole for spearing and a hearth, sometimes covered with a blind of rushes, cradle of rushes among lake tribes. These items are only a sample. Appreciation is due Mr. Latta for having secured and made available this addition to the ethnography of California.

A. L. KROEBER

The Indians of Pecos Pueblo. E. A. HOOTON. (New Haven: Yale University Press, 1930)

This is, probably, the first time in the history of archaeological excavation in the American Southwest that a complete and detailed report on the skeletal material recovered has been published. Professor Hooton's masterly treatment of the vast bulk of accurately dated skeletal material excavated by the Andover-Pecos expeditions at the ruined pueblo of Pecos, New Mexico, stands as a lasting monument to his untiring energy and anthropological skill. The volume is written in a delightful and lucid literary style that is equally unique in physical anthropology, and, at the risk of appearing an ingrate, one wishes that Professor Hooton only published on this subject oftener.

The opening chapter is a brief résumé of the history of Pecos pueblo derived from the reports of early travelers through that region when the pueblo was still occupied. There follows a detailed description of the skeletal material; number of specimens handled, burial customs; proportions of the sexes and ages represented, etc. It is by this means that the author gently introduces the details of the anthropometric technique without confronting the reader at once with awesome pages of tabulated statistics.

Professor Hooton's first problem was the attempt to correlate the physical aspects of the skeletons with the cultural strata in which they were found. Analysis by craniometry as well as by detailed study of the body bones failed to indicate any very well defined changes in their anatomy between the founding of the pueblo in ca. 1100 A. D. and its final desertion in 1838. No massed influx of another group of people could be discerned at any period, although a suggestion of what might be termed a degenerative tendency was operative during the declining years of the pueblo's existence.

Not satisfied with this result the author penetrated deeper into the problem and has attacked it from a wholly different quarter. From the material as a whole and regardless of chronological periods he has succeeded in segregating eight "morphological types" from among these former inhabitants of Pecos. This separation was first effected by observations on the crania and then proven valid by measurement on both the crania and associated body bones. The names given to these respective

"types" leaves something to be desired since they seem to be based upon the general resemblance of the crania alone. For example, the "type" whose crania resemble those of the Negro in general are called "Pseudo-Negroid;" those reminiscent of the aboriginal Australian are termed "Pseudo-Australoid," etc. Nomenclature is always the subject of criticism and this instance is no exception. The author himself admits that the terms might create a false impression on the unsuspecting reader, and it seems highly probable that they might. When these "morphological types" are compared with crania which most resemble them in appearance and actual measurement, the nomenclature falls down rather badly in places and the results are a trifle confusing and at times incongruous. Thus for example, the close similarity between the crania of the Predynastic Egyptian and the "Basket Maker Type" from Pecos gives one a better idea of the "type" in question but, as the author carefully points out, has nothing to do necessarily with any genetic connection between them. One point stands out with considerable clarity from this study and analysis of the "types," and that is that we have here to deal with a heterogeneous population, and it is to be most earnestly hoped that further research along this line will disclose the closer identity of the component parts of this apparently mixed people.

The anthropometric technique employed in this study is consistently that of the International Agreement, but what is especially noteworthy is the statistical treatment and analysis of measurements. Too much stress cannot be laid upon this highly important ramification of anthropometric technique. The paucity of these mathematical constants in the literature is painfully obvious and for that reason The Indians of Pecos will serve the future investigators of this subject as a mine of data. For each measurement taken there is computed and tabulated the number of individuals concerned, the range of variation; mean; standard deviation, and the coefficient of variation;—items which will prove a godsend to comparative work.

In the closing chapter the author's "present views on the anthropology and pre-history of the American Indian" are presented. This brilliant résumé of the subject from the standpoint of the antiquity of man in America; the position of the aboriginal American in the blood group classification, and above all the sequence of immigrant types in the populating of the Americas are discussed in a sane and dispassionate style that leaves whatever private views on the subject the reader may have quite unviolated. In fact four alternatives regarding the early migrations into the Americas are presented and the reader may populate these continents in whatever way he wants.

The Indians of Pecos, both in its material and its treatment, represents one of the great publications on the physical anthropology of the American aborigines. When one considers how small the literature is in relation to the magnitude of the problems involved, one is forced to agree with Professor Hooton that "the physical anthropology of the American Indian is still in its infancy."

GEORGE WOODBURY

Archaeology of the Central Eskimos. THERKEL MATHIASSEN. (Reports of the Fifth Thule Expedition, volume 5. 1, Descriptive Part, 327 pp., 85 plates, 135 figs.; 2, The Thule Culture and its Position within the Eskimo Culture, 208 pp., 12 figs. Copenhagen: Gyldendalske Boghandel, Nordisk Forlag, 1927.)

Very few expeditions of recent times have yielded such a wealth of high-grade anthropological information as that resulting from the Fifth Thule Expedition of 1921-23. To the Danish scientists Knud Rasmussen and his colleagues Kaj Birket-Smith and Therkel Mathiasen, the scientific world is indebted for a wealth of concrete evidence bearing on the fascinating and as yet unsolved problem of the Eskimo.

The present study is outstanding in the field of circumpolar archaeology both as regards the extent of the work accomplished and in its exceptionally lucid presentation. Fact and interpretation are largely separated in the two volumes, the first and larger discussing the actual expedition findings and their relationship to all other known sites in the eastern Arctic, while the second volume discusses the place of the main widespread culture thus determined.

The focal points of Mathiasen's own investigation are around Repulse bay, just south of the Melville peninsula and north of Chesterfield inlet; Pond inlet on the northern end of Baffin island; and Southampton island to the west of Hudson strait. The key site of Repulse bay is Naujan, an ancient village of 20 winter houses now 100 meters from the sea and from 12 to 20 meters above it. A position so far removed from the sea seems to the author to be unusual for maritime Eskimo, and he argues that the land has risen from 8 to 13 meters since the period of occupation, thus assigning a considerable antiquity, perhaps a thousand years, to the site in question. The culture revealed in house ruins and middens, while old, is exceptionally rich and was apparently based on whale hunting. It is a highly developed culture, superior in many ways to that of the present Aivilik Eskimo. The ancient and the present day peoples, while sharing many traits, were nevertheless quite different. The Aivilik, for example, at present lack the permanent winter house and pottery, as well as some twenty types of hunting and working implements common to the older inhabitants. In addition, the Aivilik today have at least nineteen unique features not reported from the old sites. Hence a cultural difference is indicated between present and past populations. Since this older culture had heretofore been reported only from Comer's midden near the station of Thule in North Star bay, North Greenland, Mathiasen designates it as the Thule culture. Similar conditions to those encountered at Naujan are reported from the station of Aivilik, and elsewhere in the vicinity, and here again the modern, loosely constructed, stone tent rings are found near the present shore line, while the old winter houses, solidly constructed stone tent rings and beehive tower traps are found well back from the present beach.

At Pond inlet the Thule culture was again encountered in two sites, and again local topography leads the author to conclude that there has been a rise of several meters in the land since the old occupation. The culture here appears to be in a later phase than at Naujan and the presence of what appears to be a fragment of cast

metal in one of the kitchen middens may indicate white contact. A minimum age of 300 years is suggested for these remains.

At Button point on Bylot island a different cultural type, marked by small, gouged-out harpoons and unique types of flint work and decorative carving, was encountered. This is obviously a phase of the Cape Dorset culture of Jenness. Mathiassen is of the opinion, on what seems to the reviewer rather slender evidence, that this material is younger than the Thule culture proper. Nor does his later opinion (2:165) that the Cape Dorset culture is merely "a peculiar, very locally stamped phase of the Thule culture" seem to the reviewer to be entirely justified. The Cape Dorset culture is as yet very poorly defined but it does seem quite different from the majority of Mathiassen's Thule findings. Other highly patinated artifacts evidently pertaining to the Cape Dorset culture were brought in by Eskimo from the north end of Southampton island, but here, too, adequate data on provenience were unobtainable.

Ruins of varying ages were excavated on Southampton island. The oldest from their location suggest a rise of the land from 5-6 meters since their occupation. The earliest houses show a Thule culture comparable to Naujan, while the latest approach very closely in cultural content to the recently extinct Sadlermiut. Especially valuable is the author's condensed account of Sadlermiut material culture obtained from Aivilik Eskimo that had lived with the former group prior to their extinction (through disease) in 1902-3. The author regards the Sadlermiut as modern representatives of the Thule culture surviving in isolation to recent times. In their permanent winter house, whale hunting, and various other traits, they resemble the Thule culture and depart from that of other modern Central Eskimo groups. Particularly interesting is the statement that the Sadlermiut lacked any taboo on mixing products of the land and sea.

A discussion of various collections from the west coast of Labrador; of the Copenhagen Museum collection from Comer's midden; and the very old Malerualik collection excavated on King William island by Rasmussen still further extend the range of the Thule culture in its various manifestations.

Part 2 is primarily concerned with the place of the Thule culture in space and time so far as this may be determined by comparison solely with known Eskimo cultures. After briefly listing the cultural characteristics and geographic range of the Thule culture, the author enters into a detailed classification and comparison of all its artifact types. This is exceptionally valuable, since it draws on a very extensive knowledge of both Eskimo literature and collections. However, only certain interesting details may be mentioned here. The thin harpoon points with open sockets so characteristic of the oldest Thule sites are demonstrated to be a widespread Eskimo form. Since harpoon heads of this type from the oldest sites excavated have remnants of sockets for side blades, Mathiassen believes they are derived from older side-bladed, types known only from Alaska. This ultimate derivation from Alaskan or Siberian prototypes is also indicated for a large number of Thule artifacts.

The screw is unknown from the Thule culture, a fact which leads the author to

agree with those who doubt that the screw was truly an Eskimo invention. In regard to the winged needle case of the central regions, Mathiassen is inclined to derive the type from the anthropomorphic needle case of Alaska. This view has been criticized by Collins (SI-MC 81:32-33), who supports the earlier opinion of Boas that the flanged, tubular needle case of the Norton Sound region in Alaska and the winged needle case of the eastern Eskimo had a common origin, with the zoomorphic details as secondary adaptations. The realistic etching and line ornamentation of the Thule culture are certainly related to the art of Alaska, but in the light of our increasing knowledge of Alaskan cultures would appear to be considerably later in the west than Mathiassen believed. It is exceedingly strange that the circle and dot design is not known at all in the Thule culture, for it occurs in all Alaskan Eskimo cultures, in Greenland, and among the Central Eskimo.

The discovery of small amounts of pottery in the oldest Thule sites at Naujan and on King William island is significant, as it extends the range of Eskimo ceramics from Coronation gulf to the west coast of Hudson bay. A comparison of pottery types and steatite vessels leads the author to conclude that the rounded soapstone vessels of the Thule culture developed from pottery prototypes in the west. In regard to Eskimo use of metals, it is significant that both copper and iron (the latter presumably meteoric) occur in small amounts in Thule culture sites.

In his discussion of the whalebone house the author is inclined to regard the round shape of the Thule structure as resulting from the nature of the material used. He thus equates the square wooden houses of the Point Barrow district and the pear-shaped house of North Greenland with the round Thule culture structure, and explains the differences as due mainly to the materials available. The circular whalebone house is said to have occurred in eastern Siberia, but it seems to the reviewer that the arguments for its occurrence there, as well as at Kotzebue sound, are vitiated by the fact that in most cases only unexcavated ruins have been observed. Obviously even a square semisubterranean house when long abandoned leaves a round pit. Mathiassen's conclusion, however, that the whalebone house itself originally came from the rich whaling districts around Bering sea seems logical. The same may be said for his belief that the skin-covered autumn house of stones, and perhaps the skin lining in snow houses employed by the Central Eskimo, represent survivals from the old Thule type of winter house. Much careful excavation must yet be accomplished in many parts of the Eskimo territory before this vexed problem of house types becomes entirely clear.

The close relationship between the Thule culture and the culture of the west is indicated by the following citation:

Of the elements in the Thule culture that are not common to all Eskimos, i.e., 95, 71 are common to the Thule culture and the western region, 58 are common to the Thule culture and Greenland and only 16 are common to the Thule culture and the present-day Central Eskimos (p. 161).

Mathiassen's careful analysis leads, therefore, to the following conclusions:

We have seen how in all parts of the central region the old Thule culture is found below the modern culture and that these two in certain respects are in contrast to each other, in the central regions proper, west of Hudson Bay, the Thule culture has been entirely swept away; a little more has remained in Baffin Land and Labrador. In the Cape York district in North Greenland we find the pure Thule culture at the bottom and its present inhabitants have retained much of the old culture, even if they have been exposed to the influence of the Central Eskimos. In Northeast Greenland we find a later offshoot of the Thule culture, whilst we have no proof that it extended down to Angmagssalik. In northern West Greenland we recognize in scattered finds most of the types of the Thule culture, even if it is not yet represented by any collective find. But otherwise the culture development both here and in South Greenland and Angmagssalik has followed its own line, although the last place doubtless with some influence from the west. In the western regions we see in all the archaeological finds great similarity to the Thule culture and, in addition, signs that a typical Thule culture would appear at the bottom if a search were made for it, something which for the present we only have from East Siberia. The Western Eskimos, however, have received a great part of their elements from the Thule culture, and an Eskimo group like the Point Barrow Eskimos is in reality very closely related to the Thule culture (pp. 180-181).

In the light of the more recent work of Jenness and Collins in the Bering sea region, one may justly doubt that a Thule culture is basic to all other Eskimo remains in the west. Nevertheless Mathiassen has clearly demonstrated the western origin of the Thule culture itself. As to the age of the Thule culture in the central regions, the reviewer confesses to some qualms in accepting all of the author's time estimates, which of course are frankly tentative. More detailed work, especially of a geological nature, will be necessary to confirm or refute them. The present report emphasizes the description of specimens, occasionally at the expense of detailed topographic description, and it is hard to form an independent judgment on such debatable matters as the location of villages in regard to continental or local uplifts. As the author states, Eskimo archaeology is in its infancy and later work alone can add to or revise the outline so well presented in the present work.

A brief analysis of the Tunit legends leads the author to regard those from the central regions as having an historical background connected with the disappearance of the Thule culture from that area. On the other hand, the much altered Greenland versions appear as the same tales transplanted to a foreign soil. This brief diversion into the field of intellectual culture is unique; elsewhere the author restricts himself definitely to archaeological or material data. Regarding the route by which the Eskimo entered Greenland, the present author favors that along the south and east coasts of Ellesmere island. He does not deny the possibility of Steensby's "musk ox route," but points out its impracticability to an essentially maritime culture such as that represented in the Thule findings.

In conclusion, Mathiassen emphasizes the specialization of the Thule culture and its western origin, and points out that it can in no sense be regarded as a truly primitive Eskimo horizon. Its theoretical value lies in verifying the formerly hypothetical Neo-Eskimo culture of Steensby and objectively demonstrating an earlier coastal culture (Thule) and a later, originally inland, culture (Central Eskimo) on the coasts of the central Arctic. In the present publication Mathiassen holds in

abeyance any judgment on the possibility of the inland culture (today represented by the Caribou Eskimo) being older than the Thule horizon. This is the view of his colleague Birket-Smith who regards the Caribou Eskimo as the last remnants of a very early Proto-Eskimo population who were originally an inland caribou-hunting people. Mathiassen points out that as yet there is no archaeological proof of the antiquity of this simple inland culture. Lacking this evidence, he believes, it is equally possible to regard these inland hunting groups as stragglers from the Thule culture lured inland by the caribou herds and revising and simplifying their culture on the barren grounds. The Thule culture would, according to this view, be the earliest Eskimo culture in the eastern Arctic and its roots would presumably have to be determined by excavations in the west.

Kroeber in a very brief review (AA 32 690) of Birket-Smith's monograph on the Caribou Eskimo favors the last interpretation suggested by Mathiassen. The present reviewer on the other hand inclines toward the interpretation of Birket-Smith, but agrees that in our present state of knowledge the unqualified acceptance of either is largely a matter of opinion. Beyond all matter of opinion is the fact that we are here presented with a wealth of detailed material bearing on the development of Eskimo culture. Working under such difficulties as only those who have attempted excavation work in the Arctic can appreciate, the author has accomplished a gigantic undertaking and he has fulfilled the task of publication equally well. Certain details and interpretations may have to be revised in the light of subsequent work, but the present monograph in its essentials bids fair to be basic in all future consideration of the Eskimo.

WILLIAM DUNCAN STRONG

The Kletzien and Nitschke Mound Groups. W. C. MCKERN. (Bulletin of the Public Museum of the City of Milwaukee, 3: 417-572, 1930. 19 figs., 2 maps, 22 pls.)

A Wisconsin Variant of the Hopewell Culture. W. C. MCKERN. (Bulletin of the Public Museum of the City of Milwaukee, 10: 185-328, 1931. 29 pls., 13 figs., 2 maps.)

These two volumes by W. C. McKern maintain the high standard which students of American archaeology have come to expect from the Public Museum of Milwaukee. Methods of excavation, details of mounds, campsites and collections are presented, while numerous drawings, plates, and tables accompany the text and make plain the evidence on which the author bases his conclusions.

The first volume deals with two groups of mounds in Dodge and Sheboygan counties. In both cases the mounds are primarily of the effigy type but contain others such as conicals, ovals, and linears. A primitive garden bed and campsites which relate to the mounds were also found in this neighborhood.

Excavation led the author to the following conclusions: that there is a certain amount of clustering of similar types in the effigy mounds, that all mounds in these groups were primarily cemeteries, that all were constructed by one people with a uniform culture; that if ceremonial significance is to be attached to the effigy mounds it is definitely involved with burial procedure. Observation on the skeletal materials

reveals the fact that with but two exceptions the population was dolichocephalic and without traces of head deformation. However, the presence of two brachycephals showing cradle board flattening indicates a difference in physical type and custom among neighboring peoples with whom they were in contact.

A considerable portion of this bulletin is devoted to a study and discussion of pottery. The author finds that the effigy mound culture produced a uniform type of pottery which belongs to the general type of ware made by the Algonkian—both Western Woodlands and Eastern. In order to avoid the difficulties encountered when cultural materials are assigned to linguistic groups McKern proposes the name "Lake Michigan pottery" to that usually described as Algonkian, and "Upper Mississippi" to the ware referred to as Siouan.

Despite his new terminology the author concludes that the local Algonkians were the authors of the Lake Michigan type of pottery. He says:

This distribution is closely parallel to that of the early historic Algonkians in the Western Woodland area. Therefore, since the Algonkians of this district made pottery, and since Lake Michigan pottery is the only ware found on many of their known camp sites, and the dominant ware of a region of known intensive Algonkian occupation, and since Lake Michigan ware is practically indistinguishable from eastern Algonkian pottery, the conclusion that the pottery making Algonkians produced a uniform general type of ware, of which Lake Michigan pottery is representative for the western area, is here advanced (p. 477)

A word of caution appears necessary. The fact that the historic Algonkian made the Lake Michigan type of pottery and that this resembles Eastern Algonkian does not justify us in assuming that all makers of Lake Michigan pottery were Algonkian or that people of that linguistic stock were necessarily the originators. Prehistoric groups with considerable variation in other elements of their cultures fall within this general pottery classification; yet at present we are in no position to connect them with historic Indians of the region.

It is interesting to note that the author finds that the pottery from old Menomini and Potawatomi campsites belongs to the Lake Michigan type. The same is true of the Effigy Mound pottery, but old Winnebago sites yield "Upper Mississippi" types. This seems to argue against the tradition that the effigy mounds are Winnebago products. Yet in burial customs the effigy mound builders are closer to the "Siouan" than to "Algonkian."

The second bulletin covers the investigation of a group of mounds in Trempealeau county, Wisconsin. In this region are hundreds of mounds which show an unusual mixture of traits not ordinarily found associated in the state, a fact which argues for frequent contacts and wide intergroup borrowings. The mounds under discussion, however, appear to have been built at an earlier date and by a distinct ethnic group. Age is attested in part by the poor state of preservation of the skeletal material when compared with that in other sites subject to similar conditions, and by the fact that in a stratified campsite potsherds from this culture were found associated with debris from the earlier of two successive prehistoric cultures. Also there is no evidence of intergroup borrowing so characteristic of the other groups of the region.

When the artifacts of this culture are compared with others from the Mississippi valley a surprisingly close resemblance to the Hopewell of Ohio is apparent. There are some marked differences, but taken as a whole the Trempealeau sites of Wisconsin are as typically Hopewell as are the Seip and Tremper mounds of Ohio.

The mounds were completely removed or were cut through with wide trenches which enlarged toward the center, thus amounting to the removal technique. To insure accuracy of observation the mounds were staked in squares, were cut down bit by bit, and all data recorded both vertically and horizontally.

The bulletin records in detail the various sites, methods of mound construction, types of burial, and all cultural objects encountered. Excellent drawings, plates, and comparative tables complete the report and present the materials which led the author to his conclusions.

The work of the Milwaukee Public Museum sets a high standard in archaeological technique and points the way to the solution of the problems of prehistory in the Mississippi valley.

FAY-COOPER COLE

SOUTH AMERICA

Spencer's Last Journey: Being the Journal of an Expedition to Tierra del Fuego by the Late Sir Baldwin Spencer: with a Memoir Edited by R. R. MARRETT and T. K. PENNIMAN (Contributions by Sir James Frazer and H. Balfour.) (Oxford: Clarendon Press, 1931. Pp. xii, 153. \$4 50.)

The present volume is intended more as a memorial to Sir Baldwin Spencer than as a finished contribution to Fuegian anthropology. The ill-fated expedition was cut short by Spencer's untimely death when field work had just begun to get under way. The end came on July 14, 1929, of a sudden heart attack, in a small snowbound hut on Hoste island, just south of Beagle channel, in the heart of the Yahgan territory.

Through the pages of the *Journal* are scattered a few brief anthropological notes, mostly on Yahgan relationship terms and on some phases of material culture. Two collections of Patagonian and Yahgan artifacts are illustrated and described in an appendix by Balfour. The Yahgan stone implements, most of which were found in the old middens on Navarin island, are, with some exceptions, far coarser in workmanship than those from the coast of Patagonia. The seeming absence of stone arrowheads in the Yahgan collection from these older middens may have a bearing upon the controverted problem of the recency of the stone-headed arrow among the Yahgan. A Patagonian skull from Santa Cruz, and an adult Yahgan skull and young Yahgan skull and skeleton from kitchen middens on Navarin island will be studied by Dudley Buxton and published in the near future as a separate paper.

Spencer's *Journal* of the expedition is carried up almost to the day of his death. It is supplemented by extracts from his letters home and by the diary of his secretary, Miss Hamilton, who accompanied him. Frazer contributes an appreciation of Spencer as an anthropologist; Marrett, a biographical memoir; Penniman, a chronological list of Spencer's works, zoological as well as ethnological.

Taken all in all, the volume is a worthy and fitting memorial to an outstanding figure in modern ethnological field research.

That he, when already advanced in years [he was born in 1860] and with a very full life's work in scientific research already achieved, should have sought out a new field for investigation, is symptomatic of his restless energy and enthusiasm. While we all must deeply deplore the tragic ending of his last venture, we may find gratification in the thought that Spencer was to the very last keenly and characteristically engaged upon his favourite and most absorbing pursuit—ethnological and zoological field-work. He would, I think, have wished his end to be thus (Balfour, 142).

JOHN M. COOPER

L'Ancienne Civilisation des Barreales du Nord-Ouest Argentin. SALVADOR DEBENEDETTI (Ars Americana, 2; Paris: Les Éditions G. Van Oest, 1931. 59 pp., 68 pls. 350 francs.)

The second volume of *Ars Americana* is the product of another member of the committee of publication, Salvador Debenedetti, who, as we are informed in Rivet's *avant-propos*, died at sea while returning from the Americanist Congress at Hamburg, greatly to the regret and loss of all Americanists. The work maintains the deluxe standard set by Nordenskiöld in the first volume. It consists of a two-page foreword by Rivet, twenty-two pages of text with twenty text figures of biomorphic designs, twenty-four pages of descriptions of plates, two pages of bibliography, and sixty-eight plates, of which eight are in color. The plates illustrate six views of the country and of the excavations, one hundred and sixteen pottery vessels, seventeen stone, seven bone, two copper, and seven gold objects.

The specimens illustrated are all from the collection of Benjamin Muniz Barreto of Buenos Aires and were excavated in the province of Catamarca, northwest Argentina, almost exclusively in the two aboriginal cemeteries of La Cienega and La Aguada during five years of excavation from 1925 to 1929. All are therefore carefully documented. They are selected from five thousand specimens secured. The region is at an elevation of about 1500 meters and is practically uninhabited and uninhabitable today since the rainfall is very deficient, it must have been much greater in pre-Columbian days. There is no stone architecture in the region, no surface indications of the cemeteries, and few evidences of aboriginal occupation. The graves show no trace of European contact and differ considerably from the remains of the latest pre-Spanish populations.

Ceramic objects were the most abundant in these graves, from one to several dozen vessels having been found in each grave; all perishable objects had disappeared. Large pitchers were used as urns for infant burial, and with these burials smaller vessels were placed within the urns. Cups, pitchers, vases, bowls and bell-shaped urns, plates, pots, and pipes are the principal forms. The ware is mainly black but the few colored vessels are of the same style and form. The decorations are generally incised, most often geometric, but geometrically conventionalized naturalistic forms are common. Most of the pitchers have one vertical handle which is almost uniformly decorated with an animal figure in relief. The human figures are

important, generally warriors with their arms, among which is figured a spear-thrower, the first occurrence of this in Argentine archaeology. Zoomorphic ornamentations are also common, mainly the llama and the puma or jaguar, but also toads, birds, and monkeys. Many of them are draconic, a style which is rare in classic Calchaqui.

Stone objects are not rare and include vases with high relief, mortars, pestles, pipes, musical instruments, and arrowheads. Few metal objects were found, axes, plaques, chisels, and punches of copper, rings and ornaments of gold. The copper objects were cast, the gold ones rolled.

Debenedetti, in my opinion, stresses unduly the unique character of the culture, and the esthetic quality of the pottery:

Differs fundamentally from those heretofore known from Argentina.

Very different from classic Calchaqui, only Nazca can compare with it.

Unusual the vessels are, but the Zavaleta collection in Field Museum, for instance, contains a number of similar pieces. (Debenedetti, by the way, neglects to mention this large collection, though noting the collections in New York and in foreign museums.) Many of the vessels are truly esthetic in form and in decoration, but the art is mainly an exotic one and to my eye less pleasing than that of many other prehistoric American cultures. The text is rather typically romance, fulsome and flowery, enthusiastic but slightly superficial. No attempt has been made to classify the culture temporally or geographically and one misses the solid, if matter-of-fact, science which characterized Nordenskiöld's contribution. However, since the appeal of this series is as much to the artist as to the archaeologist, the latter must not be hypocritical.

As in the case of the Archeology of the Amazon Basin, the work is most valuable as presenting a large series of plates of specimens of archaeological and artistic importance, few specimens of which type have heretofore been published, and few specimens of which exist in other museums and collections. The format is admirable and apparently errorless. As in many of the recent works on American art, however, there is a rather unesthetic tendency to reproduce the specimens as large as possible, allowing too small a margin, which detracts from the generally excellent effect.

ALDEN MASON

Machu Picchu: A Citadel of the Incas. (Report of Explorations and Excavations made in 1911, 1912, and 1915 under the Auspices of Yale University and the National Geographic Society.) HIRAM BINGHAM. (Yale Univ. Press for the Nat. Geogr. Soc., 1930. 244 pp., 219 ills. \$50.00.)

Senator Bingham here brings together all the results of his South American expeditions, which culminated at Machu Picchu. There are sections on exploration, Inca roads, plan and arrangement, architecture, burial caves, pottery, metallurgy, various implements, and builders. While much of the material has been previously presented, it is useful as all brought together under one cover in condensed form. Most Peruvianists are likely to remain unconvinced by the author's theory as to the

relation of Machu Picchu to the origin of the Inca dynasty. But the hypothesis is developed without over-stressing, and is certainly a legitimate indulgence of an author who is responsible for the securing of so much new and exact information. Throughout the book the treatment is lucid, succinct, and reasonable. The illustrations are very beautiful. Those executed with a pen are particularly to be commended for the splendid draftsmanship as well as reproduction. The photographic views probably would have shown as much if executed in good half-tone, and the price of the volume might in that case have been kept down to a figure less staggering to most scientists; but the process used certainly gives them a quality of art. In brief, the work is issued with a definite quality of sumptuousness; but the contents are none the less scientifically business-like and commendably wrought.

A. L. KROEBER

OCEANIA

Archaeology of Kauai. WENDELL CLARK BENNETT. (B. P. Bishop Museum, Bulletin 80, Honolulu, 1931. 156 pp., 15 pls., 56 text figs.)

This book is a concise and workmanlike account of the archaeology of one of the Hawaiian islands. It is based on a nine months study of the actual remains, supplemented by the rather scanty literature available. Descriptions of a few traits of material culture which do not fall strictly within the field of archaeology have also been included.

Although Dr. Bennett's report will be most valuable to students of local Hawaiian problems, it is not without general interest. The closely associated islands of Kauai and Niihau lie at some distance from the rest of the Hawaiian group. They were never captured or ruled by the king of any other island. Their inhabitants differed slightly from the other Hawaiians in physical type and there were also minor differences in language and culture. In a chapter entitled "Place of Kauai in Hawaiian Culture," Dr. Bennett lists the traits peculiar to Kauai and says:

Many of these features must be considered purely local developments of no great significance. Some of them, however, seem to indicate traces of an older Hawaiian culture which was covered by the later influx. . . . The contrasts are not glaring. The block grinders and the slab prototype of the block rubbers together with the Menhune cut stone causeway have flat surfaces and sharp angularity that contrasts with the curves in most of the later Hawaiian work. In this angularity, straight lines, and surfaces, there is some analogy to the Nihoa and Necker culture. The place of women in preparing food, the speech difference, the slight skeletal difference, and to a greater or less extent the different artifacts all point to a culture not the same as the dominant later Hawaiian. . . . Kauai shows the closest relation to the Nihoa and Necker non-Hawaiian culture.

RALPH LINTON

History and Culture in the Society Islands. E. S. CRAIGHILL HANDY. (B. P. Bishop Museum, Bulletin 79, Honolulu, 1930. 110 pp.)

This paper really consists of two parts, an account of the political divisions of the Society islands, and an analysis of the native culture, with special reference to Ta-

hiti. The former is nearly all hitherto unpublished material. The latter presents several new facts but is mainly derived from literary sources.

It has long been recognized that the Arii of Tahiti, the historic ruling caste, were the descendants of invaders. In the present paper Dr. Handy has attempted to reconstruct both the culture of these invaders and that of the earlier population, whom he calls the maori-Tahitians. In this reconstruction he has relied partly on local traditions, partly on archaeological evidence, and partly on the distribution of certain traits in Polynesia.

In 1923 I wrote:

It seems practically certain that a culture similar to the historic Maori and Marquesan cultures formerly existed in southeastern Polynesia.¹

I based this on the known geographic distribution of a number of traits, but it was impossible at that time to verify it by information from the region in question. It is gratifying to find that the new material which Dr. Handy presents bears out my conclusion, and that he himself has accepted it to the extent of using the Maori and Marquesan cultures as models for his reconstruction of those portions of the maori-Tahitian culture for which direct evidence is lacking.

Having come so far with me, I can only regret that he is unwilling to take the next step and admit that the old culture of southeastern Polynesia, from which the historic Maori and Marquesan cultures were largely derived, rested upon a still earlier culture stratum which had strong Melanesian affinities. He says:

I agree with Linton in recognizing in Polynesia numerous traits of culture that are of Melanesian derivation. But these seem to me not to constitute a stratum of culture and a wave or period of immigration and settlement, but local and occasional intrusions and borrowings (p. 7).

While this explanation may be satisfactory for western Polynesia, where there is plenty of evidence of recent borrowing from Fiji, it is not adequate to the situation in marginal Polynesia. In that region a plot of the geographic distribution of Dr. Handy's Melanesian "intrusions and borrowings" reveals the curious fact that, if one eliminates the Hawaiian group, for which I never claimed a substratum of Melanesian culture, they increase in number and importance in direct ratio to the distance of the various localities from Melanesia, reaching a peak in Easter Island.

Even if Dr. Handy can explain this to his own satisfaction, it is permissible to point out a few further difficulties in the way of his theory. First, if the Melanesian traits in marginal Polynesia are the result of borrowing, it is logical to suppose that the Polynesians would have borrowed most from the Melanesian group which was nearest, i.e., Fiji. The probability of this is increased by the fact that Fiji was the only part of Melanesia which was in regular contact with Polynesia in historic times. Actually, I am unable to name a single specifically Fijian trait which is present in marginal Polynesia, while many of the Melanesian traits found there, such as the

¹ Linton, *Material Culture of the Marquesas Islands*, p. 458.

high development of a curvilinear art, extensive use of human figures for both decorative and religious purposes, head hunting and the preservation of the skulls of both enemies and ancestors, masks, as exemplified by the masked mourners of Tahiti, etc., are altogether lacking in Fiji. These traits find their closest parallels in western Melanesia, beyond the known range of Polynesian voyaging.

Second, if the Melanesian traits in eastern Polynesia are the result of borrowing one would expect to find them most numerous in those regions in which voyages and foreign contacts were most frequent. Actually, the reverse is the case. Thus, in the Society group, Dr. Handy finds such Melanesian traits as the use of the bow as a weapon, the shield, a round house with a single center pole and rafters reaching to the ground, and the warrior's house as the central social and political institution of the tribe, to be limited in historic times to the island of Maupiti, which

Because of its isolation . . . preserved . . . more of the old culture of this region than is to be found elsewhere (p. 101).

Third, if one accepts Dr. Handy's assumption that the Aarii invaders of the Society group were essentially a maritime people, who had large sea-going canoes and were accustomed to long voyages, while the maori-Tahitians were essentially agriculturalists, with a type of canoe which was only a slightly improved dug-out, one would expect that the culture of the Aarii would show many more Melanesian traits, as having had much greater opportunities for contact. Nevertheless, Dr. Handy assigns practically all the Melanesian traits in the historic Tahitian culture to the maori-Tahitian stratum, and his evidence for this seems to be sound.

Lastly, and this seems to me the most important of all, if the Melanesian traits in marginal Polynesia are due to "local and occasional intrusions and borrowings," one would expect that at least some of them could be traced to definite localities in Melanesia. But such is not the case. All the traits in marginal Polynesia which appear to be Melanesian find parallels in several different Melanesian cultures and these parallels are never exact. In most cases their Melanesian distribution is so wide that it seems probable that they are fairly ancient in that region. The situation is exactly what one would expect to find if the same basic ideas had been independently modified and developed in several different Polynesian and Melanesian localities.

In view of the facts just stated, it seems most logical to interpret the Melanesian traits in marginal Polynesian cultures as survivals. However, I do not consider the case closed and if Dr. Handy has a better explanation, it will be welcomed by all Polynesian students.

RALPH LINTON

Social Organization of Manua. MARGARET MEAD. (Bernice P. Bishop Museum, Bulletin 76, Honolulu, 1930.)

This book is an important contribution to Polynesian ethnology. So many of the Polynesian cultures are now extinct, or at least moribund, that the present study

becomes doubly valuable. In spite of the acceptance of Christianity and the abolition of the highest chiefly title, Manuan social organization has been little influenced and is still functioning vigorously. Dr. Mead gives an intimate view of this society in action and points out the wide divergence between theory and practice. It is highly probable that such divergences existed in other Polynesian societies as well and that the failure of most Polynesian scholars to recognize this has been a fertile source of error. It is evident that if Samoan culture became extinct, the account of it which could be obtained from a few survivors would give a picture very different from the reality and that the more thoroughly these survivors had been instructed in the ancient lore, the greater would be the divergence. Polynesian investigators have been largely content to follow in the path laid out by the early students of the region. It should not be forgotten that these pioneers were usually the associates of chiefs and were predisposed, by their own cultural background, to exaggerate the importance of hereditary privilege and the fixity of the native social order.

In regard to the theoretical organization of Samoan society, Dr. Mead says:

All the Samoan islands are represented in an ideal political structure called the "Great Fono" (formal gathering). This Great Fono is simply a pattern made up of names held in certain families in particular villages throughout the Samoan archipelago. Each name is assigned an arbitrary rank and a fixed place in an ideal circular plan, the fixed points of which correspond to the posts in a Samoan round house . . . The Great Fono has not met in historical times, it is an elaborate gesture . . . but its form is carefully preserved in tradition and forms the basis of native theory about the lesser fonos which actually meet. . . . The fono of practical importance is that of the village, an aggregation of twenty to seventy five or eighty names, all of which, however, are never held at the same time. These names are ranked, ordered and crystallized in a series of set phrases and a fixed seating plan with a house as its model. . . . One name is always regarded as highest. Ceremonial activities, if not political ones, imply the presence of a high chief, whose home, kava cup and relatives, the village delights to honor. . . . Names and their rank, not individuals, are the units of construction. The holder of the highest title may leave his set post, but sitting at a post of less and different rank he must claim only the prerogatives belonging to the new position. . . . These names are classified in different ways according to kind of rank, according to degree of rank within each category; and in larger seating divisions within the fono, to all the occupants of which definite privileges and functions are attached. The major distinction in kind of rank is between chiefs and talking chiefs. To the chief, high or low, belong certain courtesies, a different gesture for the kava ceremony, a different vocabulary of address. To the talking chief belong certain prerogatives, notably, the right to address a meeting, the right to preside over the distribution of food, and rights to receive presents from those of the chiefly class on certain stated occasions. . . . Between the titles of chief and talking chief, precedence is determined by the rank of each title within its own order. There are many talking chiefs who outrank chiefs except in the ways in which etiquette provides a fixed procedure toward members of one order from members of the other. There are also occasional talking chiefs' titles which carry with them the right to chiefly honors if no chief be present.

The assignment of an exact rank to each name, and the vesting of each name in a particular family, would seem to completely crystallize the social structure. But Dr. Mead says.

The ideal fixity is constantly subject to reinterpretation and change. The talking chiefs whose duty it is to act as custodians of the political arrangements, are open to bribery and manipulation. The holders of small titles who wish to advance their positions are ready and willing to bribe. The very fact that the fono is not an idle form but the active governing body of the community makes such manipulation all the more likely to occur. Not only the ambitions of individuals but also the need for the efficient discharge of fixed duties provides a strong drive for change. . . . If some man of lesser rank and much greater promise is willing to make the necessary display, bestow a large number of presents upon the talking chiefs, initiate expensive festivities in the village . . . the title held by the poor or the undistinguished sinks gradually into disrepute. The lesser title held by the rich and the ambitious rises in the scale, myths of its origin are manufactured, the genealogies are rearranged, the phrasing of the fa'a lupega altered slightly, and a different set of theoretically fixed and unalterable relationships is established.

Part of a village may also split off and,

After such a split has once arisen, with a perfect pattern for all fonos in their minds, the talking chiefs rapidly formulate and elaborate a pattern for the new fono.

Such new fono forms are recognized at first by near neighbors. Later, as the years go by, malagas come from other islands and the talking chiefs of the malaga who thought they knew the fa'a lupega of their hosts perfectly, find a new arrangement to which their well trained memories and oratorical facility must be instantly adapted. The malaga goes home again. The newly learned fa'a lupega are taught to the young men who are to become talking chiefs and twenty years hence when again their village makes a malaga they may find this knowledge equally outdated. So that while many renowned chiefs can recite a fa'a lupega for the principal villages in Samoa, the correspondence between the pattern which they know and the pattern actually in existence is a function of the time at which their information was acquired.

Dr. Mead's analysis of descent groups is another important contribution, for it makes it possible to reinterpret a mass of data from other localities. She says:

The Samoan descent group is a curious bilateral grouping in which all the descendants in the male line are balanced against the descendants of the women of the family. The male line is *o tama tane*, the descendants of the women, *o tama fafine*. The female progenitors of the *tama fafine* . . . have the power to curse their brothers and their brothers' descendants if they and their children are not treated with proper consideration. Occasionally the daughters of a female progenitor can exercise this function if the real progenitor is dead. The *tama fafine* have the right to veto any important plans of the *tama tane* for alienating property or election to titles. . . . While the *tama tane* group is theoretically a local group, all living in one village and owing allegiance to one chief and one family god, the *tama fafine* are scattered through many villages, among many lines, serving many gods. They are not a group strictly, but a number of individuals possessing the same kind of claims and powers against a common group. As inter-marriage between families known to be related in any way is not permitted, every individual is *tama tane* in one family and *tama fafine* in another, in one family he inherits, in another he vetos and supervises negatively.

To those who are not specifically interested in Polynesian problems this study may also prove of value as illustrating one of the present trends in the development of anthropological method. It is a functional study of the culture of a small, well integrated group. Most of the material was gathered by direct observation rather

than from informants. Very few studies of this sort have been made by American ethnologists and the present work shows how much valuable material can be obtained by using this approach.

The author says.

The emphasis of this paper is upon cultural dynamics, the study of social processes rather than description of culture traits.

She has followed this program successfully, but the reviewer feels that the inclusion of more descriptive material would have been an improvement. The main exponent of the functionalist school has described its activities as the study of the physiology of cultures (A. R. Radcliffe-Brown, *The Andaman Islanders*, p. 299), but most of its members seem to ignore the fact that no physiological study can be intelligible unless the reader knows the anatomy of the organism under discussion.

RALPH LINTON

ASIA

History of Japanese Religion With Special Reference to the Social and Moral Life of the Nation MASAHARU ANESAKI. (Tokyo, The Yamato Society; London: Kegan Paul, Trench, Trubner & Co., Ltd. 1930. Pp. xxii+423. 43 ills.)

Long awaited, this *History of Japanese Religion*, from the pen of Japan's best-known specialist in religion, will doubtless take its place as the standard work in its field. For the first time, a single volume offers a well-organized account of the religious leaders and organizations of Japan, from the dawn of history to 1929. The point of view is scholarly, judicious, and of course, Japanese. Few indeed are the books on Japanese religion that are not the work of foreign scholars—usually missionaries—or the attempts of enthusiastic Japanese to present some emotionally defended thesis.

The anthropologist naturally wishes that such a history might be written from the angle of social anthropology, with attention focussed on problems emerging in anthropological research. The treatment, however, is that of a historian at home among documents. Hopes awakened by the subtitle are but partially fulfilled. Major personalities of Japan's religious history are well depicted; their philosophies, creeds, and enthusiasms are phrased in terms that an Occidental can comprehend, and the story moves against the background of Japanese history as a whole.

But where are the common people? How far did the influence of leaders penetrate; how did it modify the daily religious observances of peasant and artisan? Saichō, Kūkai, Hōnen, Shinran—one sees them founding monasteries, one reads that their followers preached to nobles or commoners; but what did the common people of their day know of these leaders? Did peasants behave differently in famine or illness because of Hōnen's preaching, or did they pray at the village Shintō shrine in the same old way? In Dr. Anesaki's delightful biography of Nichiren, entitled *Nichiren, the Buddhist Prophet* (Harvard, 1916), the vigorous prophet stands forth a man among men, and the reader is offered a basis for an estimate of his real influ-

ence. Perhaps it is asking much to expect a pioneer history of Japanese religious life to include detailed accounts of popular practices, but the chapters under the heading Religion and Social Life are among the least satisfying. The anthropologist would like to know what people do when they worship; how priests and monks live from day to day; whether yamabushi are the Japanese counterpart of the shaman and how they function, what part the phallicism depicted in Dr. G. Katō's monograph (in the Transactions of the Asiatic Society of Japan) plays in Japanese religious life as a whole; and what is involved in fox and badger cults. Descriptions, such as that of the Inari cult, in Kagawa's *Before the Dawn* (chapter 49), whet the appetite. Japanese religion still awaits a de Groot.

The religious life of New Japan is excellently described. Here, again, is a gap as regards popular practices, but the intellectual and religious ferment in which the youth of Japan has lived for half a century, the place of Christianity in modern life, and the rise of new sects and points of view, are placed before Western readers in perspective. Here is an estimate of Christian missions which does not emanate from a mission publicity promoter; the account is fair and sympathetic if unconverted. Dr. Anesaki's familiarity with the history of religion in the Occident helps his sense of proportion.

Details of some of the modern religious cults are lacking; perhaps too complete knowledge of radical groups is not an asset for a professor in the Imperial University. One would expect Kagawa Toyohiko to receive at least as much space as Kurata Hyakuzō, if for no other reason than to obtain, from a scholarly Japanese historian, an evaluation of Kagawa's influence. Occidentals often wonder how the best trained minds of the Orient regard personalities such as Kagawa and Gandhi. Dr. Anesaki has long urged upon his government the necessity of encouragement of religion as an antidote to those "dangerous thoughts" that continually disturb the authorities. Perhaps such a viewpoint might tend to bias the work, but on the whole, it is free from distortion.

The chapters on the early history of religion in Japan, and on Shintō in particular, add little or nothing to the material already accessible in English. As a whole, however, the book is a valuable, permanent addition to English sources of information regarding Japan, and to data on religion. Its immediate usefulness to the social anthropologist is not as great as might have been hoped for. Nevertheless, the day is here when those who study Oceania and Southeastern Asia can no longer ignore the cultural history of China and of Japan. The Oceanic peoples are marginal to the continental culture areas, and their culture can be understood only as the tangled story of India, Indonesia, China, and Japan is patiently unravelled. Dr. Anesaki's book will be consulted for its perspective on Japanese religion, and will also be useful to the puzzled specialist who has discovered missionaries of some Japanese Buddhist sect at work in Micronesia or the Malay region. A carefully selected bibliography would have increased its value, though the annotations and source references scattered throughout the volume are helpful.

DOUGLAS G. HARING

Ching Ho: A Sociological Analysis. CATO YOUNG, LEONARD S. HSU, and collaborators. (Yenching University, Department of Sociology and Social Work, Social Research Series No. 1, Peiping, 1930.)

This is a miniature "Middletown" type of study on a market town of 2500 inhabitants six miles out of Peiping. There are documented and in part statistical sections on History, Geography, Family and Marriage, Shops, Economic Organization, Politics, and Religion. The authors worked with slender resources, and are aware of their limitation of experience. They would also have preferred to examine another type of Chinese village, had time and means permitted. Nevertheless, they have made an interesting and welcome beginning of sociological field study in a new field of the greatest importance. It is to be hoped they will be given opportunity to carry the work further.

A. L. KROEBER

MISCELLANEOUS

Technical Methods in the Preservation of Anthropological Museum Specimens. D. LEECHMAN. (Ann. Rept. 1929, Nat. Mus. Canada, 1931. Pp. 127--158.)

Mr. Douglas Leechman has prepared a very useful paper under the above title. This will be welcomed by those who have such specimens in their charge, for the author has concisely covered the field, as the following headings indicate: Collecting in the Field; Cleaning; Preservation in the Laboratory; Repairing; Restoration; Numbering, Storage, Exhibition; Fumigation; Heat and Cold; Dry Ice; Naphthalene; Insect Pests; Fungi and Lichens; Materials of Animal Origin; Materials of Vegetable Origin; Materials of Mineral Origin; Bibliography.

E. W. GIFFORD

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DISCUSSION AND CORRESPONDENCE

TROCADÉRO MUSEUM

The Bulletin du Musée d'Ethnographie du Trocadéro, which will be published semi-annually, recounts in its first issue (January, 1931) the magnificent programme of rehabilitation undertaken since the affiliation of the Trocadéro with the National Museum of Natural History (1928). Among the most important schemes are the glassing in of the semicircular gallery of the second floor (*1^{er} étage*), the transfer of folk-ethnographic material to a separate institution; the enlargement and modernization of the library; and the complete labeling of exhibits with the aid of the staff and special assistants. The Oceanian hall has already been opened to the public after an overhauling that is not yet considered definitive but marks a definite advance over previous methods of installation; and in cooperation with the Institut d'Ethnologie the Museum has organized an expedition to the Sudan, Kamerun, the Congo, etc. under the leadership of M. Marcel Griaule.

Dr. P. Rivet and M. G. H. Rivière are to be heartily congratulated both on their vision and on what their enthusiasm has already achieved under difficult circumstances. No recent visitor to their Museum could fail to be impressed with the signs of a new spirit reigning within its walls.

ROBERT H. LOWIE

NATIONAL RESEARCH COUNCIL

RESEARCH AID FUND

The National Research Council has been given the administration of a limited fund from which grants can be made in comparatively small amounts toward the support of the research work of individual American investigators and of special projects of restricted extent in the fields of the natural sciences.

This fund is in charge of a special committee of the Research Council composed of the Chairman, the Treasurer and the Permanent Secretary of the Council, together with the Chairmen of the Council's seven divisions of science and technology. Correspondence in regard to applications for grants should be addressed to the Secretary, Committee on Grants-in-Aid, National Research Council, Constitution Avenue and 21st Street, Washington, D.C.

The Committee has adopted the following policy for the administration of this research aid fund:

1. Grants will be made in order to cover such expenses as the following: apparatus, materials and supplies, and in special cases, field expenses and clerical assistance.
2. In general grants will not be given for personal salaries or fellowship stipends, for expenses of publication, for the purchase of books, or for travel to attend scientific meetings.

3. Preference will ordinarily be given to the support of investigations
 - (a) which can be completed with the aid of the grant,
 - (b) toward which the university or other institution to which the applicant is attached also contributes financially or through special support,
 - (c) for which a grant of not more than \$1,000 is requested
4. A report of progress, with items of expenditure, should be made by the grantee to the Secretary of the Committee at least twice a year, as of December 31 and June 30.
5. The title to property purchased from grants will remain with the National Research Council until ultimate disposition of the property is made by the Council.

Three meetings of the Committee on Grants-in-Aid will be held before the funds now held for this purpose revert to the donor. These will presumably occur early in October (December 1931), and February (1932). Applications should be made as early as possible.

Grants made during the past year of particular interest to Anthropology are as follows.

- Franz Boas: The rate of individual growth
 Carleton S. Coon: The racial composition of the Albanians
 William S. Webb: Archaeological survey of Kentucky
 M. J. Herskovits: Aricanisms in American Negro
 Melville Jacobs: Ediphone records of N. W. Oregon Indians
 E. F. Castetter: Ethno-biology of Indians of southwestern United States.
 Fay-Cooper Cole: Archaeological investigation in Chihuahua, Mexico
 Laurence Foster: Racial mixture between Negro, Indian, and white stock in Maryland and Delaware
 W. R. Morse: Physical anthropology of the Western Chinese: the aboriginal tribes of Western China, and the Tibetans
 Sophie de Aberle: Growth and development in Southwestern Indian children
 Frederick S. Hulse: Race mixture between Spanish, Indian, and Negro stocks
 Jessie W. Murray: Investigations of aboriginal Indian sites near Athens, Pa.
 E. Sapir: The collection of the songs of the Nitinat Indians of Vancouver Island

MASKS IN THE SOUTHWEST

In view of the questions sometimes raised concerning the aboriginal character of masks occurring in the Southwest, a few data on the subject may be of general interest. Just why the aboriginal character of masks in the Southwest should be suspect has never seemed quite clear, aside from the fact that they have never turned up in archaeological explorations. Masks are certainly rather widespread in North America, notably on the Northwest Coast, in the Plains, and among the Iroquois. There seems no doubt that Cushing found masks at Key Marco in Florida.¹ These had rather definite animal associations. This is rather interesting in view of the animal associations of the human featured masks of the Yaqui and Mayo in western Mexico. That they have not been found archaeologically in the Southwest may have something to do with the ancient methods of disposing of worn out or discarded

¹ Frank Cushing, *Proc. Am. Philos. Soc.*, 35, Philadelphia, 1896.

masks. It is quite possible that they may have been generally burned as are the Fariseo masks of the Yaqui and Mayo, but even so it may be predicted that eventually one will turn up.

The masks of the Yaqui and Mayo are interesting because of their geographical nearness to the Pueblo Southwest. There is no direct evidence of their antiquity in Sonora either, but there seem to be some other evidences of their aboriginal character. The only early reference in the region is in a letter of Padre Pedro Mendez quoted by Perez de Ribas,² which mentions that on his arrival at Ocoroni (the Ocoroni were a small southern group of Cahita, neighbors of the Mayo, now probably extinct) he was greeted by dances in which some performers wore masks. This was a number of years after the establishment of missions, however.

While not conclusive, it seems important that the Pascoles dancers of the Yaqui and Mayo, who are definitely animal impersonators (but less so than in a slightly earlier period), remove their human featured wooden masks from their faces when dancing to the music of the introduced harp and violin, wearing them again when dancing to the music of the aboriginal drum and flute. If the use of masks were introduced by the Spanish, it seems hard to understand why they should be disassociated with the introduced instruments or associated with animal impersonations. Both masked and unmasked, the dancers participate in the more intimate events of the semi-Christian ritual of the current religion, but these functions are secondary to their character as animal impersonators. The Pascoles dancers also perform jesting functions reminiscent of the Southwest. They are the purveyors of the native tobacco, the smoking of which is a part of every important ceremony. It has been suggested that their masks closely resemble certain masks from southern Mexico.³

The Yaqui and Mayo also use hide masks closely resembling some of those from the Southwest. These are large, the openings for the eyes being at the mouth level of the grotesque features painted upon the masks. They have long upright "horns," a long nose, and large ovoid flapping ears, portions of the hair being left on to produce grotesque beard and moustache effects. They are worn by a group in the Lenten and Easter ceremonies known as Fariseos, who not only take the part of the Biblical Pharisees but are definitely clowns and to some extent policemen, their latter functions suggesting Southwest conditions. They seem much more an adaptation of a native institution to Christianity than a Christian introduction. At any rate, the two types of masks offer definite resemblances in one group to both southern Mexico and the Southwest.

In an article of fairly recent date Parsons⁴ asks if there are any early references to masked dancing in Mexico and also says there are no early references to masked dancing in the Southwest. I cannot supply offhand any early references to masked dancing in the southern part of Mexico, but the literature is full of references to

² Andres Perez de Ribas, *Historia de los triunfos de nvestro Santa Fe* etc., Madrid, 1645.

³ See *Mexican Folkways*, vol. 5, no. 3, Mexico City, 1929.

⁴ Elsie Clews Parsons, *Masks in the Southwest of the United States*, *Mexican Folkways*, as cited above.

masks, while with regard to the Southwest, Dr. Parsons has overlooked a definite reference in a reliable source. Without going into the early literature of Mexico, Joyce⁵ notes that the priest of Cinteotl wore a mask made from the thigh skin of a sacrificed woman, and that at the close of a fifty-two year cycle pregnant women and small children wore masks of maguey leaves.⁶ Spence⁷ lays emphasis on the fact that Mexican priests frequently wore masks of their gods, impersonating them. The god Xipe was usually masked⁸ and Quetzalcoatl is described customarily as wearing a turquoise mask.⁹ There are also references in various works of Saville, notably those on woodcarving and turquoise working. Consequently, it must be conceded that the Mexicans were thoroughly familiar with masks, whether they danced in them or not.

The Southwestern reference mentioned above is the day-by-day account of the expedition of Antonio Espejo, written by Diego Perez de Luxan.¹⁰ Speaking of the Tigua of the Rio Grande, Luxan says:

Throughout this nation they have many masks which they use in their dances and ceremonies

Luxan's diary is apparently quite accurate, and this statement must be accepted at its face value. Certainly there is nothing equivocal about it. The expedition of Espejo was organized primarily to rescue the friars left by Coronado in the Pueblo country and was the second expedition to visit the Southwest. The only Spanish source for the masks would have been the Coronado expedition, and it is hard to imagine this hardboiled treasure-hunting party introducing masks, or their having had time to become as integrated in the culture as the Luxan statement implies. In fact, if the masks were of Spanish character, Luxan would most probably have noted it as a curiosity.

The reason there are so few references to masked dances in the Southwest was probably quite correctly stated in a quaintly phrased sentence of Bandelier's:

The dances of the Pueblos were therefore no surprise to the whites; they had seen far more striking displays of the same nature, and unless a calisthenic feast showed features which farther south they had not seen, it was passed over in silence or slightly noticed.¹¹

The Spaniards, as anyone who has read the early accounts has discovered to his exasperation, rarely mentioned anything which was the same or similar to Mexican customs. North of Mexico, for example, there is not a single reference to a metate

⁵ Thomas A. Joyce, *Mexican Archeology*, p. 70. New York, 1914.

⁶ *Ibid.*, 76.

⁷ Lewis Spence, *The Gods of Mexico*, pp. 177, 231. New York, 1923.

⁸ *Ibid.*, 206.

⁹ *Ibid.*, 121.

¹⁰ Diego Perez de Luxan, *Expedition into New Mexico made by Antonio de Espejo, 1582-83*. Trans. by George P. Hammond and Agapito Rey, Los Angeles, 1929.

¹¹ Adolph F. Bandelier, *Final Report of Investigations Among the Indians of the Southwestern United States, Carried on Mainly in the Years from 1880 to 1885*, 1: 151, Cambridge, 1890.

until the Pueblo region is reached. There, the method of grinding corn was fully described by several writers because the mealing box in which the metate rests and the kneeling position struck them as something new.¹²

The case against Southwestern masks in view of the new evidence, particularly the Luxan reference, seems to boil down now simply to the fact that they have never been found archaeologically. But there is still a little digging to be done in the Southwest.¹³

RALPH L. BEALS

¹² It may be of interest that Luxan also gives by far the earliest account of a snake dance in the Southwest for the Rio Grande Pueblos.

¹³ Since writing the above, Dr. E. M. Loeb's article appeared in the last issue of the *American Anthropologist*, calling attention to a reference in L. Biart, *The Aztecs*, Chicago, 1905, page 78, to the *Quezalcoatl* ceremonies in Cholula, where occurred dancing with masks representing animals. This gives one Mexican case of masked dancing.

ANTHROPOLOGICAL NOTES AND NEWS

DR HENRY A. CAREY, of the Department of Egyptology, Metropolitan Museum of Art, New York City, and Mr. William C. Hayes are to assist Mr. Ambrose Lansing in excavations conducted in 11th dynasty tombs at Thebes, work to begin in November. Later they will continue work in the west magazine of the pyramid of Senusert I of the 12th dynasty (about 2000 B.C.) at Lisht. The work at Lisht will continue until June 1932, when the expedition will return to the United States.

THE INTERNATIONAL CONGRESS of Prehistoric and Protohistoric Sciences will be held in London from July 25 until July 30, 1932. The subscription is fixed at \$5.00. All communications should be addressed to the Secretary, British Organizing Committee, Society of Antiquaries, Burlington House, Piccadilly, London, England.

Mr. Frederick Webb Hodge has been appointed director of the Southwest Museum, Los Angeles, taking charge January 1, 1932.

On December 28 and 29, 1931, the American Anthropological Association and the American Folke-Lore Society held their annual meetings at Phillips Academy, Andover, Mass.

American Anthropologist

NEW SERIES

Vol. 34

APRIL-JUNE, 1932

No. 2

KINSHIP TERMS AND CROSS-COUSIN MARRIAGE OF THE MONTAGNAIS- NASKAPI¹ AND THE CREE

By A. IRVING HALLOWELL

IN a recent study of the kinship terminologies of the Algonkin-Ottawa-Ojibway I attempted to show that the use of certain terms was only intelligible as a reflection of cross-cousin marriage.² Owing to the absence, at the time, of direct ethnographic or historic evidence, except in the case of the Ojibway,³ and the fact that in many cases the terms used at the present day showed fewer significant equations than did the manuscript vocabularies of the seventeenth and eighteenth centuries, the conclusion was drawn that cross-cousin marriage had been formerly practiced among these peoples, but had become obsolete.

In October 1928, shortly after Dr. W. D. Strong's return from Labrador, I learned from him that he had discovered the practice of cross-cousin marriage among the Barren Ground band of the Naskapi and that this fact was clearly reflected in their kinship terms. The partial publication of his data⁴ makes it possible to institute a more satisfactory comparison of the vocabularies of the Cree-Montagnais linguistic division in order to determine the extent to which cross-cousin marriage is actually reflected in the kinship terms of these dialects. Rivers,⁵ it is true, on the basis of Morgan's schedules, drew attention to the marital implications of the Cree terms, and later Michelson⁶ incidentally referred to the fact that Lacombe's vocabularies favored an inference of cross-cousin marriage. Despite Rivers' sociological bias he frankly stated that in this case the data lacked "the completeness which would allow us to make the inference [of cross-cousin

¹ I prefer to use this hyphenated term since Montagnais, in the conventional sense, is scarcely broad enough and because there is, as yet, no definitive study available of the dialectical subdivisions of the Labrador Indians. A comprehensive term is desirable which may be used to include all the Algonkian speaking peoples of the peninsula.

² Was Cross-Cousin Marriage practiced by the North-Central Algonkian? Summary read at the 23rd International Congress of Americanists (Sept. 1928), New York.

³ For whom two independent observations by explorers were cited.

⁴ Cross-Cousin Marriage and the Culture of the Northeastern Algonkian. AA, 31:277-288, 1929.

⁵ Kinship and Social Organization, 50-51, 1914.

⁶ Notes on Fox Mortuary Customs and Beliefs. BAE-R, 40:376, 1925.

marriage] with confidence" and Michelson remarked, "It would be interesting to know whether among both of them [i.e., Cree and Ojibway] cross-cousin marriage actually takes place." Neither of these scholars, however, undertook a detailed comparative study of Montagnais-Naskapi or Cree terms as a whole, a task which, in the light of Strong's discovery, seems more profitable now than heretofore.

In the present paper I have attempted to summarize all of the evidence for cross-cousin marriage which may be inferred from the linguistic data available in both published and unpublished vocabularies of the Cree-Montagnais-Naskapi dialects. For the Montagnais-Naskapi division, in addition to Strong's data, Speck has published a list of terms obtained at Escoumains⁷ and he has allowed me to use unpublished data obtained at Lake St. John and for the Mistassini. Lemoine's "Dictionnaire" has also been utilized.⁸ Of even greater importance, however, are two manuscript dictionaries of the seventeenth century, one of them written by Père Bonaventure Favre, the other by Antoine Silvy, both Jesuit missionaries to the Montagnais.

Of Favre (Fabre, Faure, Lefebvre) very little is known. He was born in 1655, came to Canada in 1688, and died at Quebec 1700.⁹ The dictionary attributed to him appears to be the only work of this nature which he wrote and apparently the extant manuscript is a copy, made at Tadoussac (1695-96) of the original document,¹⁰ no trace of which exists. There seems to be no doubt whatsoever as to its authenticity as a seventeenth century document, or to its attribution. That it is in the Montagnais language likewise seems certain. But whether Father Favre was attached to the Tadoussac Mission or elsewhere, I have been unable to discover. The determination of this fact would require an independent investigation, as would the assignment of the language represented in the dictionary to a specific local or dialectal group.¹¹ While the facts which such studies might reveal would

⁷ Kinship Terms and the Family Band among the Northeastern Algonkian. AA, v. 20, 1918.

⁸ Dictionnaire Français-Montagnais. Boston, 1901.

⁹ Melançon, Liste des Missionnaires-Jesuites Nouvelle-France et Louisiane, 1611-1800, Montreal 1929. Cf. R. G. Thwaites, The Jesuit Relations, etc. (Cleveland, 1896); and R. Streit, Bibliotheca Missionum—1916-1928, for slightly variant dates.

¹⁰ See J. C. Pilling, Bibliography of the Algonquin Languages (Washington, 1891), where a statement to this effect in the manuscript itself is quoted in full.

¹¹ When I examined this manuscript in Quebec I had a limited time at my disposal and since the arrangement of the dictionary is Montagnais-French, I found it necessary to devote myself entirely to the collection of kinship terms and not to dialectal analysis. Professor Speck has not seen the manuscript and from the terms and a short vocabulary I showed him is unable to state which local dialect is represented.

be of fundamental importance in relation to the question we have set out to investigate, the use of the kinship terms themselves in a comparative way is not invalidated.

Father Silvy is much better known. He was born in 1635, arrived in Canada 1673,¹² and, after spending several years with Allouez in Wisconsin at the Mission of Saint Frances Xavier, was ordered to Tadoussac (1678).¹³ He left there a year later, however, to minister to the Montagnais on the other side of the height of land in the region of Hudson's bay. Pilling, quoting Sasseville and Shea,¹⁴ assigns the composition of the dictionary to the years between 1678 and 1688. After participating as chaplain in d'Iberville's abortive attempt to win the Hudson's bay region from the English, Silvy spent several years in Montreal and Quebec, returned to France in 1707, but died in Quebec, 1711.¹⁵

As in the case of Favre's manuscript, the exact dialectal affiliation of the language represented has not been determined but, in Professor Speck's opinion, it appears to be fairly close to modern Mistassini.

Another important Montagnais dictionary of the early eighteenth century, written by Father Pierre Laure, has unfortunately disappeared.¹⁶ It was almost certainly compiled at Chicoutami and we even know the name of the Montagnais woman who instructed Father Laure, so that the locale of the dialect which it represents is in this case indisputable. Since another important manuscript of this well known missionary turned up a few years ago,¹⁷ perhaps it is not too sanguine to hope that his dictionary may some day reappear.

For the Cree, the most satisfactory vocabularies for comparative pur-

¹² Melançon, *op. cit.*, and Thwaites, *op. cit.*, 59:306, give this date. Streit and Pilling, *op. cit.*, give 1671.

¹³ Cf. Thwaites, *op. cit.*, and J. J. Campbell, *Pioneer Priests of North America (1642-1710)*, p. 201 (New York), 1911.

¹⁴ Notes on the two Jesuit manuscripts belonging to the estate of the late Hon. John Neilson (privately printed, New York, 1881). The dictionary is now in the government archives, Ottawa, Canada.

¹⁵ See Campbell for an account of Silvy's part in the d'Iberville expedition, and Pilling.

¹⁶ See Campbell, 234. Pilling states that the "Quebec Historical Society, in its *Transactions*, 3: 406, acknowledges the presentation of a Dictionary of the Montagnais language by P. Laure, 1726." I verified this fact in Quebec and found that it was presented by A. Stuart and listed in the Donations from December 27, 1830-October 31, 1837. There was no reference to it in their catalogue, however, but since the documents belonging to the society were being transferred to the government archives when I was there (January 1927) I consulted Pierre-Georges Roy, Archivist of the Province, but he could find no record of the document either.

¹⁷ See Campbell, 218.

poses are those of L. H. Morgan¹⁸ and A. Lacombe,¹⁹ but I have also examined the lexical material published by E. Chappell,²⁰ W. H. Keating²¹ A. Mackenzie,²² D. W. Harmon²³ and the manuscript vocabulary of T. Bowery.²⁴ I have not been able to see the large manuscript dictionary of Père V. T. Végréville.²⁵

The general plan adopted in the presentation of the concrete material which follows closely parallels my paper in the Proceedings of the 23rd International Congress of Americanists. The present paper is really a sequel to that study and should be read in conjunction with it. In both cases I have used the linguistic equations one would theoretically expect to find associated with cross-cousin marriage as major headings. Under these appear the two chief subdivisions of the linguistic division under discussion: (a) Montagnais-Naskapi, (b) Cree. I have chosen to take Strong's data from the Barren Ground band as the starting-point in each division since we have the most satisfactory evidence in this case for the coexistence of the cross-cousin terminology and the custom itself. Following the Cree data I have briefly called attention in most cases to the correspondences in Algonkin-Ottawa-Ojibway, since a great many cognate terms occur in this division as well as a similar pattern of usage, thus linking this group with the Cree-Montagnais-Naskapi and lending support to our general thesis. Under each subdivision I have also given both the positive and negative cases where the equations occur, together with the lexical variations within the geographical and temporal limits of the data available for the linguistic group under discussion. In addition I have attempted a chronological interpretation of certain lexical and pattern changes insofar as this may be inferred from comparative data and actual documentary evidence. This procedure may seem rather tenuous at times, but I am convinced that a merely static consideration of the material leads us nowhere. It is scarcely possible that the kinship systems of these Algonkian peoples have remained stable despite the radical changes which have taken place in other departments of their culture. The documentary sources, together with the strong

¹⁸ Systems of Consanguinity and Affinity of the Human Family. SI-CK, v. 17, 1871.

¹⁹ Dictionnaire de la Langue des Cris, 1874.

²⁰ Narrative of a Voyage to Hudson's Bay, 268-269 (London), 1817.

²¹ Narrative of an Expedition to the Source of St. Peter's River, Lake Winnepeek, Lake of the Woods, 2 vols., Philadelphia, 1824.

²² Voyages from Montreal . . . through the continent of North America, New York, 1802.

²³ A Journal of Voyages and Travels in the Interior of North America, 1820.

²⁴ A Dictionary of the Hudson's Bay Indian Language. See Pilling, *op. cit.*

²⁵ Pilling, *op. cit.*

probability that cross-cousin marriage was once practiced much more widely than now, aid us materially in reconstructing the character of these changes. Without adopting the hypothesis that some significant changes have occurred, say in the last three centuries, even aside from the question of cross-cousin marriage, the kinship systems of the present day not only appear contradictory but they are completely unintelligible historically. While the incompleteness of the evidence leaves many points unsettled it seems possible to demonstrate a number of consistent trends and specific changes which no longer stand forth as arbitrary and isolated phenomena, if we take into account the fact that these lexical shiftings and substitutions followed in the wake of more fundamental sociological changes which the impact with exponents of European culture brought about. The differential effects of such contacts upon the native culture of the Algonkin hunters is obviously a matter regarding which *a priori* hypotheses are useless but many contemporary variations of native culture may be partly a result of this process. Our only recourse is to study the contemporary facts and interpret them in terms of their most probable antecedents.

1. WOMAN'S SISTER-IN-LAW = WOMAN'S FEMALE CROSS-COUSIN

(a) *Montagnais-Naskapi*.—The term *nūwitci·wāgin* is used for individuals in both of the above relationships by the Barren Ground people. In addition, however, it is probably used more frequently for mother's sister's daughter than *nimis*.²⁶ As we shall see, its usage is markedly different in this respect from the equivalent term used by men. A still more extended usage is for a husband's female parallel and cross-cousins.²⁷

So far as I know, this vocable does not appear elsewhere as a Cree-Montagnais relationship term,²⁸ except in the neighboring Davis Inlet band where it connotes woman's sister-in-law and mother's brother's daughter but not father's sister's daughter.²⁹ For the latter relationship *nimis* is

²⁶ In his article Strong gives this last term in his word list but calls attention to the synonymous use of *nūwitci·wāgin* in a footnote. In correspondence he has stated the opinion that *nūtwici·wāgin* is more correct for mother's sister's daughter. This usage may represent the beginning of a tendency to ignore this distinction between parallel and cross cousins.

It may be noted here that in the orthography of native terms we have followed the sources employed.

²⁷ Letter, W. D. Strong.

²⁸ It is not impossible that this word occurs in the manuscript dictionaries either as a kinship term or with the connotation later discussed, but I did not have it in mind when I examined them.

²⁹ In Strong's list (p. 281) *nimis* is incorrectly given for "female cross-cousin." The correct usage appears on p. 280.

conventional. Otherwise the use of *nūwitci-wāgin* conforms with that of the Barren Ground people.

Personally, I am inclined to believe that the rather puzzling usage of *nūwitci-wāgin* may be partly explained by the hypothesis that it was not originally an item of the kinship vocabulary of these two bands. It may be a fairly recent accretion which has not become fully integrated. This is suggested by the fact that outside of these groups the word is solely used to connote "my friend, associate or comrade."³⁰ At Lake St. John *nāwi'tcā-wāgan*³¹ is employed in this way and Harmon,³² Mackenzie,³³ and Lacombe³⁴ give the same connotation for it in their Cree vocabularies. In the Algonkin-Ojibway languages it also has a similar meaning³⁵ but, again, does not appear as a relationship term. A further, more specific, usage of this word is of interest. Baraga includes *widjiwagan* among the words one may use for "wife" and says that *niwish*, although seldom employed, may also be used. For the Algonkin *Cuoq* also gives this latter word for the same relationship, stating that it is "en style familier."

From the point of view of these comparative data, which undoubtedly could be more widely extended, it seems to me that the use of *nūwitciwāgin* as a kinship term for woman's cross-cousin, woman's sister-in-law, and other relatives is an intelligible development closely related to the etymology of the stem. But, owing to the fact that its usage as a kinship term by the northern Labrador bands mentioned is unique, whereas most of the other terms they employ have cognates in related Algonkin tongues, it seems more likely that the term in question is a recent addition to the kinship vocabulary rather than an ancient term which has disappeared elsewhere and survived in northern Labrador. Despite the fact that genuine cognates of *nāwi'tcāwāgan* do not appear in other dialects of the Cree-Montagnais or Algonkin-Ojibway linguistic groups it is significant that terms which are its semantic equivalent are applied to woman's sister-in-law and sometimes cross-cousin.

In Old Montagnais there is another term, *nikan*, which is said to connote woman's sister-in-law,³⁶ and in the same document it appears as "mon amy."

³⁰ Strong writes me that the only meaning he was able to elicit for *nūwitciwāgin* was "someone who lives with you," a rendering entirely consistent with its usage among other Algonkian peoples and probably fairly close to its real etymology.

³¹ Manuscript vocabulary, F. G. Speck.

³² *e-wich-i-wa-gun*, my friend.

³³ *ne-wechi-wagan*, my companion.

³⁴ *ni witziwagan*, mon ami.

³⁵ *ni-wit-chi-wagan*, my companion (Mackenzie), *widjiwagan*, compagne (*Cuoq*); *widjiwagan*, comrade, companion (Baraga).

³⁶ Favre, "ma belle soeur dit la femme."

Lemoine also reports it as one of two terms for sister-in-law without indicating the sex of the speaker.³⁷ There is no hint that it was ever used for woman's cross-cousin. The same term, in a diminutive form (*ni-kánic*), is reported by Strong for three-step siblings-in-law³⁸ in the Barren Ground and Davis Inlet bands. In the former group it is also employed for wife's father's sister's son, i.e., wife's cross-cousin, a usage which is analogous to *nāwī'tcawágān* for husband's cross-cousin in the Barren Ground band. The lack of comparative data on terms for three-step siblings-in-law or other remote non-consanguineous relatives in Montagnais and Cree bands³⁹ does not permit any satisfactory conclusions concerning the relative antiquity of terms or their connection with social customs. It is possible that, since we find *nikan* actually recorded in the seventeenth century, it may have been used for certain two-step siblings-in-law at that time, as well as for more remotely related individuals of this class. That traces of this earlier practice are still to be found is illustrated by Lemoine's record as well as by Speck's report that at Escoumains *nikan* was being used for woman's sister's husband. However, these cases and the others cited above fail to support the idea that this term was originally one used exclusively between women. In fact, Dr. Speck tells me that at Lake St. John today *nikan* is a word used by men, meaning "brother" in the sense of friend or companion.⁴⁰ It is possible that Favre had the same meaning in mind when he reported one use of *nikan* as simply "my friend." And it may be remarked that Thavenet, after commenting upon the Algonkin usage, says, "*Les Sauteux disent nikan mon frère*," although I have not been able to discover this usage in any Cree vocabularies. At any rate, the usage of *nikanis* in Algonkin-Ottawa and Ojibway in the sense of friend, companion, or even blood brother, receives ample support from the older manuscripts extant, as well as from the later published records and information reported by investigators of the contemporary dialects.⁴¹

³⁷ The other term is *nītūm* which is used between men and women, as we shall see later.

³⁸ I.e., wife's brother's wife, husband's sister's husband, wife's sister's husband, husband's brother's wife. See E. W. Gifford, *Californian Kinship Terminologies* (UC-PAAE, 18:190.)

³⁹ Morgan does not include Cree terms for these relationships, although he has collected data from other tribes.

⁴⁰ Cf. Lemoine where *mes frères* (en s'adressant à un auditoire) = *nikanishtuk*.

⁴¹ See previously mentioned paper for bibliographical details. In Algonkin manuscripts 1 and 2 *nikanis* is given as a general term for brother in addition to special terms for older and younger brother; Thavenet, Cuocq, and Lemoine indicate a similar usage, emphasizing a male speaker, while André gives "*mon cousin germain*." At Maniwaki Speck reports its use as "brother," and at Golden Lake Johnson found it used for "younger brother."

Ottawa: André and Jaunay give it as "brother," the former as "cousin germain" also, in addition to other terms for younger and older brother, the latter as "*mon camarade*" in

The extreme variability in usage that we find in the Montagnais-Naskapi group may be partly explained by the fact that nikanish is included among the words given by Lemoine for "mon (ma) parent,"⁴² and Strong derived a similar impression of its meaning in the course of his inquiries.⁴³ If some such etymology as this is correct, the more or less specialized usage for certain non-consanguineous relatives is intelligible in the case of the Montagnais-Naskapi, as is also its usage among other Algonkian speakers.

So far as a specialized term for woman's sister-in-law is concerned, including perhaps cross-cousin, it is even possible that the Montagnais-Naskapi originally had a term cognate with the Cree form we shall now discuss, although it has not been reported.

(b) *Cree*.—Morgan's vocabularies evidence the equivalence of the terms for woman's sister-in-law and cross-cousin. (n'-jä'-koase, 37, 38; n'-dä'-koase, 39). Lacombe gives n't'akkus for the former relationship only. These are cognate with Algonkin-Ottawa-Ojibway, ni·dáng, ni·dángwe (woman's sister-in-law) and with the composite form of this term (ndaŋ g^wc,ε·, ndaŋ g^wce) which in these languages is applied to woman's female cross-cousin. The stem appears to be distinct from that found in either of the two terms used by the Montagnais-Naskapi. As we attempted to show in a previous paper, it is reducible to an element which conveys the idea of close friend or companion.⁴⁴

Thus, while there is a radical disparity in the terms employed when we compare different groups, the semantic parallelism is striking, as is the extension of the sister-in-law term to female cross-cousins in northern Labrador, in certain Cree groups, and in the case of the Algonkin-Ottawa-Ojibway. In the cases where the latter practice does not occur, the term used for sister-in-law is restricted to that relationship alone⁴⁵ and either sibling terms or their derivatives are used for woman's cross-cousin, typically the term for older sister (woman speaking) or, according to Speck (Escoumains), "descriptive explanatory terms" are employed.

Of the three methods of designating woman's cross-cousin the Escoumain practice is unique not only in the region under discussion but among

addition. In Morgan's vocabulary it appears as step-brother or parallel cousin, man speaking; and Blackbird gives it as "brother."

Ojibway: Morgan's vocabularies exhibit the same usage as in Ottawa; Baraga gives "my friend, my brother (in friendship)"; similarly Jones, who does not include it as a genuine kinship term, nor does Radin. At Depot Harbor, Johnson reports it as brother or friend.

⁴² Lemoine, 193.

⁴³ Correspondence.

⁴⁴ *Op. cit.*, ICA, 23.

⁴⁵ Davis Inlet band excepted. See Strong, 280.

Algonkians elsewhere, and I should judge it to be a recent phenomenon. The extension of sibling terms to individuals in the cross-cousin relationship, judging from the similar changes in cousin terminology which have occurred elsewhere in eastern Algonkian languages,⁴⁶ I also would interpret as due to modern readjustments in the kinship vocabulary. Consequently, it would appear that the remaining method, the grouping of female cross-cousins with sisters-in-law (w.s.), probably represents the most ancient pattern known to us. If this be so, the Barren Ground band preserves the most conservative usage irrespective of whether *nūwitci'wāgin* represents a relatively new lexical innovation or not.

2. MAN'S BROTHER-IN-LAW = MAN'S MALE CROSS-COUSIN

(a) *Montagnais-Naskapi*.—In the Barren Ground band *ni-stau*⁴⁷ is the term employed by a man for wife's brother, sister's husband, and male cross-cousin. In the Favre manuscript *nichtau* is also explained as denoting "beau-frère" and "c8sin." This last connotation is indefinite, but the sex of the relative referred to is clear (thanks to French morphology) and, in view of the fact that under old native conditions parallel cousins were undoubtedly called by sibling terms in all of the languages under discussion, "cousin" can only be reasonably interpreted as male cross-cousin. The sex of the speaker can hardly be questioned either, since the term is one which is only employed by males in these dialects.

Aside from these two cases, the one representing a contemporary, but isolated, Naskapi band and the other a seventeenth century Montagnais dialect, the connotation of *ni-stau* is confined to man's brother-in-law. In these latter instances male cross-cousins (m.s.), like parallel cousins, are designated by the term for older brother (m. or w. sp.). Thus, in the Davis Inlet band, *nistic* is used for older brother, male parallel cousin and cross-cousin (m. or w. sp.) in contrast with the Barren Ground usage where the same term is only applicable to individuals in the first two relationships mentioned. Speck (Escoumains) gives *nastac* as the term for older brother and with the suffix-*qa'wān* it is used for older male cousins, both parallel and cross. No other terms for male cousin appear in his vocabularies. Lemoine gives an identical usage of terms.

⁴⁶ Cf. Recent Changes in the Kinship Vocabulary of the St. Francis Abenaki (ICA, 22) and *op. cit.*, ICA 23.

⁴⁷ Strong records this term in the second person (*tsitau*) instead of the first. I give it here in the latter form since all of the other terms are given in the first person. In Speck and Lemoine -c- = -s- in Strong's rendering. Favre also appears to intend a prepalatal unvoiced sibilant.

(b) *Cree*.—In the kinship vocabularies of Morgan⁴⁸ and Lacombe,⁴⁹ as well as in those of Chappell,⁵⁰ Harmon,⁵¹ and Mackenzie,⁵² the same term is given for man's brother-in-law as in Montagnais-Naskapi, but there is no record of its use in the sense of cousin. Morgan, indeed, is the only one who gives any terms at all for cousin (man speaking)⁵³ and consequently evidence which indicates that the equation under discussion did not occur. This fact is curious in view of the other equations found in various Cree dialects, but it must be borne in mind that all of Morgan's schedules are relatively late and were not collected from the most isolated groups.

Apparently no other term for man's brother-in-law occurs in any Cree-Montagnais language, and the only cases known where this term is employed for any other relative have been referred to at the beginning of this section. This fact would appear to be significant since we know that in one of these instances cross-cousin marriage is actually practiced. The extended usage of the term, therefore, can hardly be dismissed on *a priori* grounds as having no connection with this form of preferential mating.

In Ojibway-Ottawa-Algonkin, *nita* is the cognate of Cree-Montagnais *ni'-ctaw*, and in its composite form (*ni'táwis*) it was used for man's cross-cousin in the seventeenth century in Ottawa and Algonkin and at later periods with the same connotation throughout the north-central dialects.

These languages differ sharply, then, from those of the Cree-Montagnais group, in so far as the equation under discussion is concerned. I also believe they may be regarded as more conservative on this point for the following reasons.

Only two terms (and very simple derivatives) appear to have been used for man's male cross-cousin by Algonkian speakers from the region of the Great Lakes to northern Labrador. One of these is a sibling term, which it is customary to use for parallel cousin also. The other is a brother-in-law term. Now where there is any early documentary evidence at all, such as we have for the Ottawa and Algonkin on the one hand, and the Montagnais on the other, the equivalence of the terms for man's brother-in-law and male cross-cousin is recorded. It is also the characteristic usage of the Barren Ground band, a marginal group in which cross-cousin marriage is actually practiced. Consequently it seems to me that we can reasonably assume that where male cross-cousins are equated with siblings and parallel cousins we have a usage which probably arose after cross-cousin marriage

⁴⁸ Neese-tow (37, 38); neesh-tow (39).

⁴⁹ n'istaw, "mon beau frère, dira l'homme."

⁵⁰ nees-tow, my brother-in-law

⁵¹ ish-taw, brother-in-law

⁵² nistah, my brother-in-law.

⁵³ nees-chas (37, 39), nee-sas' (38), i e., older brother, m. or w. speaking.

fell into disuse. Terminologically it represents a more recent practice than the equating of man's cross-cousin with brother-in-law.⁵⁴

3. SIBLING-IN-LAW (OF OPPOSITE SEX) = CROSS-COUSIN = SWEETHEART

(a) *Montagnais Naskapi*.—In the Barren Ground band *ni-tamac*⁵⁵ is the term employed between siblings-in-law of opposite sex as well as between male and female cross-cousins, whereas in the Davis Inlet band its use is confined to the sibling-in-law relationship. It is in this latter meaning that Lemoine reports it⁵⁶ as does Speck for the Lake St. John band⁵⁷ (but not at Escoumains),⁵⁸ while a derivative term is similarly employed at Lake Mistassini,⁵⁹ and among the Tête de Boule Davidson gives the simpler cognate form⁶⁰ as the term for sister-in-law (manuscript) but not brother-in-law.

Thus it is plain that, among the contemporary Montagnais-Naskapi bands, we have a common term for sibling-in-law of opposite sex, but the use of the same term for cross-cousin is unique in the case of the Barren Ground people.

All the more striking, then, is the evidence for a usage similar to that of the Barren Ground band in the manuscript dictionaries of Favre and Silvy. The former not only explains *nitim* as "le frère de mon mary" and "la soeur de ma femme"⁶¹ but records *nitim8s (h)*⁶² as the term for "ma c8sine item fille de mon oncle." In respect to this last usage the explanation is not so specific as could be desired, but in view of the data from the Barren Ground band and other comparative material it seems reasonable to believe that a cross-cousin was intended. In Silvy's manuscript "frère de mon mari" is the only explanation given for *nitim*⁶³ but *nitimous(h)*⁶⁴ receives the same elucidation as Favre gives it.

⁵⁴ In a previous paper I have cited the interesting case of the River Desert Indians as an illustration of the tendency of the cousin terminology of the northern Algonkians to undergo radical changes. At present they apply the old term for brother-in-law and male cross-cousin to parallel male cousins, instead of the more usual sibling term.

⁵⁵ The stem is obviously *-tam-*, *-c* = a diminutive suffix.

⁵⁶ But without the diminutive ending.

⁵⁷ *ni-tam* (manuscript vocabulary).

⁵⁸ Where no sibling-in-law terms are given, descriptive terms being the type employed.

⁵⁹ *ni-tamuckiwan*; *-kawan*, having the signification, "not by blood descent." Cf. Speck, *op. cit.*, 157, note 4.

⁶⁰ *nitim* (manuscript vocabulary).

⁶¹ This term is also given in the third person *8itim8* with the explanation "son beau frere d'une femme," "sa belle soeur d'homme" so that there is no ambiguity whatsoever about its application.

⁶² The (h) is in darker ink than the remainder of the entry and evidently has been added at a later period in order to correct the phonetics of the term as originally written.

⁶³ It is also given in the third person as well.

⁶⁴ In this manuscript also *k* has been added to the original entry.

From these manuscripts we can thus draw the conclusion that *ni'tam* was the term used in the seventeenth century between siblings-in-law (of opposite sex) and that the same term plus a diminutive suffix was employed for cross-cousin. There is the closest kind of correspondence, therefore, between the usage which Strong records and that which prevailed three centuries ago; the only difference being that in the Barren Ground bands the diminutive form is exclusively used. Elsewhere, in the cases where the term is used for sibling-in-law alone (with the exception of the Davis Inlet band), the form *ni'tam* prevails, which again corresponds to the older usage and suggests that it may be the most ancient form.

There is, however, still another meaning of the term to be considered, which is of the utmost importance in connection with the question of cross-cousin marriage. Both Favre and Silvy add the meaning "sweetheart" to those which have already been given for the diminutive form of *ni'tam*.⁶⁵ So far as the manuscripts are concerned we thus have the equation, sibling-in-law (of opposite sex) = cross-cousin (of opposite sex) = sweetheart. Strong did not obtain a term for "sweetheart" by direct inquiry but informs me that *tcitamuc* is used in this sense in a myth of the Barren Ground band.⁶⁶ Surely no better demonstration is needed of one of the ways in which this word may be properly used, and, incidentally, this fact is a check upon the accuracy with which both Favre and Silvy explained the terms given in their vocabularies. It is also interesting to note that in at least two other Labrador bands, where cross-cousin marriage is not practised (i.e., at Lake St. John and Lake Mistassini),⁶⁷ *ni'tamuc* and *ni'tamuckàwan*, respectively, are the ordinary words employed for "sweetheart" but not for cross-cousin.

In view of this fact, especially in the light of the preceding data, it is difficult to escape the conclusion that this practice is connected historically with an earlier period when cross-cousin marriage prevailed among these tribes and when linguistic and sociological usages were completely in harmony.

(b) *Cree*.—In this linguistic group the term for sibling-in-law of opposite sex is the precise cognate of the one which is characteristic of the Montagnais-Naskapi division.⁶⁸ And, according to Lacombe, *nitimus* designates

⁶⁵ Silvy gives "*ma maitresse*" and Favre, in explanation of the term as given in the third person, writes, "*son galant, sa maitresse*." "Sweetheart" seems the closest English equivalent in view of the seventeenth century usage of the French terms and also because it can be used for either sex.

⁶⁶ Otter marries Wolf-girl.

⁶⁷ Manuscript data, F. G. Speck. At Lake St. John, Dr. Speck was told that *ni'tamuc* (m. sp.) could only be used for a cousin if one expected to marry her.

⁶⁸ Morgan, *nee-tim*; Lacombe *nitim*. Harmon records *e-tim* as "sister-in-law," without further explanation.

"ma cousine dira l'homme à la fille du frère de sa mère, et la femme dira de meme au fils du frère de sa mère."⁶⁹ Although this statement is not so complete as one might wish, it leaves no doubt as to the relationship of the individuals specified. They are cross-cousins and the use of the diminutive for them parallels the Montagnais manuscript and the usage of the Barren Ground people. In the case of the terms recorded by Morgan's informants, the Lowlands Cree (no. 39) employ a cognate term (*neé-ta-moos*) and the other bands represented may be said to have followed a similar usage, despite the fact that it becomes *ch* in Morgan's orthography.⁷⁰ A further hint regarding the connection of *ne-tim* with the cousin relationship is the fact that Chappel gives it as the term for "my cousin-female." Such a brief and ambiguous explanation becomes intelligible in view of the comparative data we have presented.

Unfortunately Lacombe does not give any word for *amant*, or *amante*, in his dictionary, and since we have not been able to discover any other source through which we might determine whether the Cree use the sibling-in-law or cross-cousin term for sweetheart, we must leave this usage an open question.

But it would scarcely be a surprise if they did employ it in this sense, since we have already traced the phonetic and semantic equivalents of the term we have been discussing in a closely related, yet distinct, group of Algonkian languages, i.e., Algonkin, Ottawa, and Ojibway.⁷¹ In this division of the Algonkian stock we found that *ninam*⁷² was the characteristic term for sibling-in-law of opposite sex and that plus a diminutive or double diminutive it was also employed for cross-cousin and "sweetheart." It was also demonstrated by documentary evidence that these equations went back to the seventeenth century in the case of the Algonkin and Ottawa. In addition we pointed out that although cross-cousin marriage is not practiced by these peoples today and most of them do not use the term in

⁶⁹ Lacombe adds the statement that, "pour ce [i.e., cousins] qui est des enfants du frère du père, ils s'appellent frères et soeurs." The children of two sisters are also included in the sibling group. See p. 664.

⁷⁰ The terms given are *neé-che-moos* (no. 39); *neé-che-moosh* (38) for cross-cousins of opposite sex in each case. Our interpretation is strengthened somewhat by the fact that if a woman is using these terms the wives of the individuals referred to are called sister-in-law which is the same term as that used for woman's female cross-cousin and an analagous usage follows in the case of male speakers. Furthermore, if we do not equate these terms with the diminutive of *neé-tum* they are completely anomalous in the kinship vocabularies of these groups.

⁷¹ See the writer's paper in the ICA, 23.

⁷² The initial *n* of the stem here = *t* in Cree-Montagnais. Cf. E. Sapir, The Algonkin Affinity of Yurok and Wiyot Kinship Terms, SAP-J, 15:22, 1923.

question for cross-cousin, yet among the Ojibway it is still the word commonly employed for sweetheart.^{72a} This was also found by me to be the case at Lake Nipissing, and although I stated that inquiries about the use of the word *ni·ni·mucę* caused considerable amusement, I attached no particular significance to this fact. But since Strong has reported a special form of joking relationship between cross-cousins in Labrador⁷³ this reaction not only becomes intelligible but assumes an ethnographic importance which definitely links up with the interpretation that it seems necessary to place upon the associated facts.

4. SON-IN-LAW = CROSS-NEPHEW

(a) *Montagnais-Naskapi*.—The discovery that members of the Barren Ground band use *n'ti k'ʷti m*⁷⁴ for both son-in-law and cross-nephew is a very significant fact, since this equation has not been reported elsewhere among Cree-Montagnais speakers. The correlation between the actual practice of cross-cousin marriage and this equation would consequently appear to be a functional one.

Elsewhere this term appears either with the connotation son-in-law (Davis Inlet,⁷⁵ Mistassini⁷⁶) or cross-nephew (Silvy, Favre,⁷⁷). Where *n'ti·k'ʷti m* is used for son-in-law the term used for both cross and parallel nephews is *ntocim*.⁷⁸ This latter usage is also characteristic at Lake St. John and Escoumains.⁷⁹ It is likewise the only term given for nephew by

^{72a} Since completing this study I had an opportunity to examine the Mississauga (Ojibway) ms. in the Toronto Public Library which Chamberlain utilized (Language of the Mississauga Indians of Skügog, 1892). On pp. 5 and 12 I found that *ninimouchén* was the word given for "ma maitresse." Chamberlain did not include this word in his printed vocabularies, so I draw attention to it here, since it substantiates the usage of this vocable at a period of more than a century ago.

⁷³ *Op. cit.*, see p. 283.

⁷⁴ Strong writes this term *entiwhitim* but I have attempted to correct his orthography. *En*, e.g., is certainly initial *n* (the personal pronoun), and *wh* I believe to be a mishearing and transposition of *k'ʷ*.

⁷⁵ Strong, 281.

⁷⁶ Speck manuscript, *n'takwatam*.

⁷⁷ Silvy, *nitik8atim*, *mon neveu*. Also for "ma tante" [sic]. Favre, *nitik8a(?)*, *mon nepveu*, *fil de ma soeur* (The final letters of this term were illegible.) *8tik8atim*, *son nepveu*, *fil de sa soeur*. While it is plain that Favre is trying to indicate the cross-nephew relationship here (m.s.), Silvy is ambiguous. But since the term in question has never been reported for the parallel nephew relationship I believe we may safely infer what the seventeenth century usage was.

⁷⁸ Here again I have substituted *n* for *en* in Strong's orthography.

⁷⁹ Speck manuscript, *nducam* and, *op. cit.*, *ntocam*.

Lemoine and it appears in the Silvy manuscript with the same ambiguous explanation.⁸⁰ In the latter case, however, I believe that its proper usage was for parallel nephews because Silvy gives the term *nitik8atim* for nephew also. It is scarcely likely that these terms were interchangeably used as real synonyms in the seventeenth century, because there is plenty of evidence for the differentiation of nephews in contemporary Algonkian languages, where the aboriginal pattern has been best preserved. And, whereas *ntocum* is at present reported for both types of nephews, there is not a scrap of evidence to indicate that *n'ti·k"ti·m* was (or is) ever used for parallel nephews.

So far as we may interpret the foregoing facts historically, I think they indicate that *ntocum* is undoubtedly a very old Algonkian term for parallel nephew. As we shall see, its widespread use in this sense, far beyond the Labrador region, supports this view. It is likewise significant that its usage for cross-nephew appears to involve an extension of meaning, since in such instances it is always used for parallel nephew as well, while the contrary situation does not seem to exist. It looks very much as if a substitution for some other cross-nephew term had taken place. If this hypothesis is correct, the terminology of the Barren Ground band would represent the only remnant of the aboriginal pattern that has been reported to date. In all the other bands, factors have arisen which have brought about the terminological grouping of parallel and cross-nephews.

In regard to *n'ti·k"ti·m*, it appears that its usage for cross-nephew is of considerable antiquity, in so far as we may admit the testimony of the documents on the one hand, and its occurrence beyond the Labrador region on the other. Its usage for son-in-law, on the contrary, while entirely compatible with cross-cousin marriage, is complicated by the fact that there is a term for this relative, not reported by Strong or by other Labrador investigators, recorded in the Silvy manuscript. This is the term *nin8hagan*.⁸¹ It differs from most of the other terms under discussion by reason of its descriptive character. Apparently, it signifies the residence of a son-in-law with his wife's family.⁸² This we may infer from Algonkin and Ojibway data on the one hand, and from the usage of a feminine cognate by certain modern Montagnais bands, on the other. Lemoine,⁸³ for instance, after

⁸⁰ *nito8chim*, mon neveu.

⁸¹ *Gendre*.

⁸² I.e., matrilocal residence after marriage. In almost all of the northern and northeastern Algonkin bands a number of such cases have been reported. Usually the son-in-law inherits his father-in-law's hunting territory in such instances. In view of the more general patrilineal inheritance of property in these bands these exceptions are of considerable sociological interest.

⁸³ *Dictionnaire Francais-Algonquin*.

giving the Algonkin equivalent of *n'ti·k*ti·m* for son-in-law, adds —nahangicim as a synonym and explains it by the phrase, “s'il demeure chez son beau-père.” Baraga⁸⁴ gives naangish as “the son-in-law in the family,”⁸⁵ although niningwan is apparently the ordinary term for son-in-law. Naan-gab (nin) he explains as “I am son-in-law, or daughter-in-law, in a family, *living* with the family” (*italics mine*), which suggests the residential idea involved. At Lake St. John and Mistassini, ninahagānckwem may be used for daughter-in-law and means “a new woman joining (in the residential sense?) the family.”⁸⁶ This is the form of the nearest modern Montagnais cognate to the term recorded by Silvy. There is, however, another contemporary word for son-in-law which is phonetically cognate with the Cree terms for the same relative and in its semantic content suggests a linkage with the terms discussed above. This is nāhatcām, probably meaning, “a new man on my hunting ground.”⁸⁷ It does not appear in the manuscript dictionaries or in Strong's vocabularies.

(b) *Cree*.—The terminological grouping of cross-nephew and son-in-law is not to be found in any of the Cree vocabularies to which I have had access. The term for cross-nephew as given by both Morgan⁸⁸ and Lacombe⁸⁹ is however distinct from that used for parallel-nephew,⁹⁰ and is cognate to Montagnais-Naskapi *n'ti·k*ti·m*. This term also links up with Algonkin-Ottawa and Ojibway, where niningwān and its diminutive are used to connote son-in-law and cross-nephew respectively,⁹¹ a remarkable parallel to the Barren Ground usage. Among the Cree, on the other hand, there is a separate term for son-in-law which is plainly cognate with Montagnais nāhatcām.⁹²

If we take all the foregoing facts into account, it seems to me that we

⁸⁴ A Dictionary of the Otchipwe Language, 2: 260 (Montreal), 1882.

⁸⁵ Cuoq and Lemoine likewise give this term as a synonym.

⁸⁶ Speck manuscript. Close cognates to this term are also found in Algonquian and Ojibway. See next section.

⁸⁷ Lemoine, naatchim; Speck manuscript vocabulary, Lake St. John: nāhatci 'm = “a new man on my hunting ground”; nāhat'ci win, applied to a new territory occupied by a hunter. Here again it will be noted that the meaning given is conditioned by the circumstance that a man has joined the band of his wife's father. Were it not for the older term with a similar implication one might have been led to interpret this practice as a recent innovation.

⁸⁸ *n'-de-kwa-tim'* (37, 38); *n'-deh-kwa-tim'* (39).

⁸⁹ *n'tikwatim*.

⁹⁰ Which is cognate with Montagnais-Naskapi *ntocum*.

⁹¹ Hallowell, *op. cit.*

⁹² Morgan, na-hak'-sim (37, 38); *n'-ha'-ke-shim* (39); Lacombe, ni nahākisim, mon gendre Cree k Montagnais tc before i(α). In Morgan's schedules the same term is said to be used for sister's daughter's husband, and brother's daughter's husband, man or woman speaking.

have a general analogy to those we discussed under the equation: man's brother-in-law equals cross-cousin. Here again the pattern of usage employed by the Barren Ground people is closer to that of the Algonkin-Ottawa-Ojibway than to the Cree pattern. The term for son-in-law in Cree, moreover, is that used by the modern Montagnais. But the Montagnais manuscript material is confusing, since the modern term for son-in-law is not recorded. In its place another, unique, term appears, which is again distinct from the cross-nephew term given. Nevertheless, I believe that an interpretation of these facts in terms of the cross-cousin marriage hypothesis, and the recognition that terminological changes have probably occurred in fairly recent times, will give us some insight into the historical situation.

We may assume, in the first place, that the oldest usage of *ntocām* was for parallel-nephew for the reasons previously stated. This holds in both Cree-Montagnais and Algonkin, Ottawa, and Ojibway. Hence, the cases where we find it employed for cross-nephew represent a secondary development, historically speaking. Originally there must have been some other term employed for cross-nephew which *ntocām* displaced in these instances. The facts we have at our disposal indicate that *n'ti·k^wti·m* was so used. It not only appears in the Montagnais documents but also in closely related dialects such as Cree. The further question involved is whether its oldest usage was in this sense or that of son-in-law. If we accept the latter hypothesis, as suggested by the Algonkin-Ottawa-Ojibway material, where the diminutive form is used for cross-nephew and not the reverse,⁹³ the case looks very simple, for we might argue that cross-cousin marriage was responsible for the extension of the term to cross-nephew. For the north-central Algonkian this is a plausible hypothesis, as it is also for the Davis Inlet and Mistassini bands, where cross-cousin marriage is not practiced, but the term is still used for son-in-law and not cross-nephew. Sapir, however, argues that **-lěkwa-*, **-lekwa-lě-* is the original Algonkian stem for cross-nephew and implies that the related son-in-law terms are a secondary development, without invoking any sociological hypothesis to account for this fact.⁹⁴ When viewed in terms of its wide geographical distribution, as well as the documentary evidence, it does seem that forms of *niti'k^wtim* show a more marked semantic association with cross-nephew than with son-in-law. For the Cree-Montagnais, at least, we know of no older term for cross-nephew.

In regard to the son-in-law terms a significant fact may be noted. Both

⁹³ See Hallowell, *op. cit.*, where all of the terms applied to blood relatives are diminutives of those which apply to relatives by affinity.

⁹⁴ See pp. 22 and 43.

the one given by Silvy and the modern Cree-Montagnais term were shown to be more transparently descriptive in character than most of the other terms in our series. Cognates of Silvy's nin8hagan are likewise used for daughter-in-law in Algonkin and Ojibway as well as old and modern Montagnais. Hence, it will be desirable to review these daughter-in-law and cross-niece terms before attempting to draw any further conclusion.

5. DAUGHTER-IN-LAW = CROSS-NIECE

(a) *Montagnais-Naskapi*.—The above equation is only found in the Barren Ground band and in one of the manuscript dictionaries. It does not occur in the vocabularies of any of the other Labrador people about which we have information.

The term Strong obtained⁹⁵ was nāginakwim, which, if we prefix the personal pronoun ni- and interpolate the syllable -ha- between nā- and -gin-, becomes the equivalent of ninahāgānckwem,⁹⁶ which Speck found to be the term for daughter-in-law at Lake St. John and Mistassini. These latter people never apply it to the cross-niece, nor is it so used in the Davis Inlet band, where it is also used for daughter-in-law exclusively.⁹⁷ That it is an old term is indicated by its occurrence in both seventeenth century manuscripts, Silvy giving it in what amounts to the same form as above⁹⁸ and Favre giving it without the feminine suffix.⁹⁹ In this latter form it is given by the former missionary as the term for son-in-law, as we have already pointed out. Consequently, we may infer that at this period the same term, sometimes used with the feminine suffix, was employed as a generic term for child-in-law.¹⁰⁰ Its descriptive character, in contrast to most of the other terms of the kinship vocabulary, is a point already touched upon as well as the fact that its etymology harmonizes perfectly with its usage.

In contrast to the Barren Ground usage, at Davis Inlet, Lake St. John, and Mistassini,¹⁰¹ as well as at Escoumains, the term ntocām plus the feminine suffix is used for parallel and cross-niece.¹⁰² This practice is analogous to the use of a single term for parallel and cross-nephew. And here too it

⁹⁵ It does not appear in the article, *op. cit.*

⁹⁶ -c- is a diminutive, -kwem is a feminine suffix

⁹⁷ Speck does not give any term for this relative in his Escoumains terminology.

⁹⁸ nin8haganisk8e8, ma bru, belle fille.

⁹⁹ nin8hagan, ma bru, femme de fils.

¹⁰⁰ A similar statement could be made with regard to its usage in the north-central dialects, *op. cit.*

¹⁰¹ nducāmickwem (Speck manuscript).

¹⁰² Lemoine also gives nītūshimishkwem as the only term for niece.

seems to me, we must regard this custom as a secondary historical development which, from the standpoint of what was probably the older form of Cree-Montagnais kinship, indicates a revision of usage, symptomatic of the general reorganization of the relationship system of these groups which has been in progress during the last two centuries or more. In the Escoumains band, e.g., special terms for cross-niece and cross-nephew are lacking; there is no distinct term for daughter-in-law, and cousins are not distinguished from siblings. In the Davis Inlet band, on the other hand, although the simplification in the usage of the terms has not proceeded quite so far and most of the old terms are still extant, the same tendencies appear to be at work.¹⁰³

That there was an older term for cross-niece, distinct from the one which in the Barren Ground band is also employed for daughter-in-law, is attested by Silvy's manuscript and a Cree cognate. This is the term *nichtim*. It occurs twice in Silvy's vocabulary, once with the simple explanation "ma niece," and again with the following explanation "ma niece, la femme de mon neveu; ma bru, la femme de mon fils". So far as the usage of *nichtim* for daughter-in-law and (cross) niece is concerned we have plain evidence of an equation which suggests cross-cousin marriage, and, although a different term is employed, indicates the antiquity of the pattern exhibited by the Barren Ground people today. Since we have cognates elsewhere of the same term being used for cross-niece, I think that despite Silvy's ambiguity we can be practically certain that cross-niece is intended. The usage of *nichtim* in this way is also supported by the fact that in our vocabularies from contemporary Montagnais-Naskapi bands we find the parallel niece term often extended to cross-niece, but not a single case of the reverse process is on record. It would appear that there is a strong resistance involved here to the use of the old term for cross-niece in this manner, whereas the inclusion of the daughter-in-law within the connotation of this term is still a feature of nineteenth century Cree vocabularies.¹⁰⁴

The application of *nichtim* to the "wife of my nephew" is more puzzling. The interpretation theoretically consistent with cross-cousin marriage is

¹⁰³ From Lake St. John and Mistassini we do not have complete vocabularies. But here again similar tendencies are in evidence in the kinship system.

¹⁰⁴ If it be admitted that Cree-Montagnais *st* corresponds to *ss* in other Algonkian dialects, the antiquity of a widespread cognate term for cross-niece receives further support. Sapir, at any rate, has made an exceedingly strong case for Algonkian **-ssēm* or **-'ssēm* as the stem for cross-niece. See Sapir, *op. cit.*, 23, 43. It may also be remarked in passing that the term for daughter-in-law in other Algonkian languages is reducible to the same stem. Cf. our discussion of the point in the paper cited.

that a parallel nephew is intended (man or woman speaking). Since a man in all of these languages calls his parallel nieces and nephews by terms which are the equivalent of step-son and daughter, the spouses of these individuals naturally fall into the child-in-law class. Assuming that cross-cousin marriage is also in vogue, it will happen more or less frequently that a man's parallel nephew (step-son) will actually be married to his cross-niece, just as his own son may be, so that on theoretical grounds the terminological equivalence is clear: cross-niece = daughter-in-law = wife of parallel nephew. The wife of a cross-nephew, on the other hand, would be either a man's own daughter or one of his brother's daughters, in which case the logical terms would be "daughter" or "step-daughter," respectively. At the same time we cannot assume that cross-cousin marriage was practiced consistently in every generation to the fullest possible extent. From a practical standpoint the wife of a cross-nephew may not always have been a member of the family group. In such cases *nichtim* would be most likely the term employed. Consequently I think that Silvy's statement is not only intelligible but also quite correct as a general statement. It is supported by Morgan, who likewise gives the term "daughter-in-law" for sister's son's wife, brother's son's wife (man or woman speaking), which in Cree may also be used for cross-niece.¹⁰⁵ As a parallel usage we have in Morgan's Cree schedules the use of the son-in-law term for sister's daughter's husband and brother's daughter's husband, but this term is distinct from the one used for cross-nephew. Theoretically, this terminology is difficult to reconcile with cross-cousin marriage but it will be recalled that it was only in the Barren Ground band that we found a cross-nephew term being used for son-in-law. If a single term was once used the same explanation we essayed in the case of *nichtim* would apply here, since the same principle is involved in both usages, i.e., the extension of the child-in-law terms to the spouses of nieces and nephews,¹⁰⁶ primarily those of the parallel class.

(b) *Cree*.—In Lacombe's vocabularies, but not in Morgan's, *ni nahâkaniskwem* is said to signify "ma bru," but it is remarked that *n'istim* is "plus communement" employed. This latter term is the only one given for

¹⁰⁵ *nee-tim* (37, 39) *nee-stim* (38). The former term should contain an *s* else it becomes indistinguishable from the sibling-in-law term. That this is a case of bad phonetics or a misprint seems likely in view of the fact that all the terms are explained as "daughter-in-law," under which head the orthography is consistent with what one would expect.

¹⁰⁶ The same practice was observed among the north-central Algonkians since in Document 5 (Algonkin) *nahanganik* is explained as "ma bru v fm du neveu"; while in Morgan's schedules of the Ojibway and Ottawa *nisim* and *ningwan* are employed for the spouses of nieces and nephews. In this group the son-in-law and cross-nephew terms are equivalent but the cross-niece term is *nicimis*.

daughter-in-law in Morgan's vocabularies,¹⁰⁷ while in Lacombe's list it is the only term which appears for cross-niece. In two of Morgan's schedules the same term is entered for older cross-niece, which tallies with the usage given by Lemoine, except for the emphasis on age differentiation. In these cases the term for younger cross-niece assumes a form cognate with the Algonkin-Ottawa-Ojibway term for cross-niece.¹⁰⁸ In the remaining instance neese-che-mis is the term given. It is possible that these terms represent recent borrowings from the north-central dialects.¹⁰⁹

Comparing Cree with Montagnais-Naskapi usage we find that in both groups there is evidence for the equating of daughter-in-law with cross-niece. But in respect to the terms used the Barren Ground people are the only ones that employ *nināhagānckwem* for both relationships, although this must be a very old word for daughter-in-law. The Cree, however, employ a term which is cognate with the one recorded in Silvy's manuscript (*nichtim*).

We may conclude from the foregoing data that:

(1) *nināhagānckwem* is primarily a descriptive term for the daughter-in-law relationship, etymologically connected with a similar term for the son-in-law connection, and originally, perhaps, connoting the idea of residence on the part of a child-in-law of either sex with a spouse's parents. It was not a kinship term in the narrow sense. This is borne out by the occurrence of cognate forms in Algonkin-Ottawa-Ojibway. In usage they are practically identical with those described above but, side by side with them, appears another term for daughter-in-law (*nissim*) which seems to be a genuine kinship term possibly related to Cree-Montagnais-Naskapi (*nistim*, *nictim*). The extended usage of *nināhagānckwem* in the Barren Ground band correlates with cross-cousin marriage there and thus seems to be of sociological significance, especially since in modern bands, where this form of preferential mating is absent, the term is confined to daughter-in-law. Just how it has come about that the Barren Ground people, conservative as they are, have lost the older term for cross-niece I do not know. As the matter stands, they exhibit an old pattern of usage but employ the term in question uniquely.

(2) So far as documentary evidence is available, *nictim* is the oldest known term for cross-niece. In this respect it parallels *n'tik n'ti-m* for cross-

¹⁰⁷ neese-tim (37); neesh-tim (38, 39).

¹⁰⁸ I.e., Cree, neese-che-mish (37), neeste-che-mis' (38) Algonquian-Ottawa-Ojibway, *ni-cimi s*.

¹⁰⁹ Cf. T. Michelson, Terms of Relationship and Social Organization (Proc. Nat. Acad. Sci., v. 2, 1916) on Cree borrowing from Ojibway.

nephew. The extended usage of the term in old Montagnais is paralleled in modern Cree vocabularies, and it is difficult to believe that originally this practice had no sociological significance. The probable equivalence of this term with *nissim* in the north-central dialects is also a fact worth noting here. It is striking that, although it was impossible to establish with certainty the general equivalence of terms for cross-niece and daughter-in-law in Algonkin-Ottawa-Ojibway, the usage of *nissim* is actually explained in this way by André in his *Dictionnaire Algonquin*. The occurrence of the same term with the same dual usage in old Montagnais, old Algonkin, and modern Cree cannot be dismissed as a mere linguistic coincidence. Although employing a different term but in the same manner, the contemporary Barren Ground people must also be taken into account, and they practice cross-cousin marriage.

(3) The term *ntocam*, +diminutive + feminine suffix, is primarily a term for parallel niece or, without the suffix, for parallel nephew. The extended usage of this vocable is a relative modern phenomenon indicative of a reorganization in the usage of terms that has occurred as a result of sociological changes. With the decline of cross-cousin marriage the old terms for both cross-niece and cross-nephew were emptied of their sociological content in so far as they no longer served to emphasize the classification of cross-nepotics with children-in-law. Hence the terms for parallel nephew and niece could easily be extended to include cross-nieces and nephews. Simultaneously, we may suppose, coordinate changes were occurring in the designation of parents' siblings, and cousins and children-in-law were set apart as a distinct group. These linguistic reorientations probably varied from band to band both spatially and temporally, which accounts for the marked differences we observe today. In some cases old terms for cross-nieces (or nephews) disappeared altogether, while the old descriptive term for the child-in-law relationship, originally perhaps a synonym, tended more and more to assume the status of a genuine kinship term in certain cases. It served to fill the gap left by the cross-niece and nephew terms which in their extended usage had functioned at an earlier period.

6. MOTHER-IN-LAW = FATHER'S SISTER = MOTHER'S BROTHER'S WIFE

(a) *Montagnais-Naskapi*.—In the Barren Ground band, *nisokwis* serves the triple designation indicated above.¹¹⁰ The neighboring Davis Inlet peoples restrict the same term to mother-in-law,¹¹¹ a practice followed by

¹¹⁰ The term is also used for father's father's brother's daughter and step-mother (correspondence, W. D. Strong).

¹¹¹ A woman may also use *noham*, i.e., grandmother. The *h* in this term, as recorded by Strong, corresponds to *k* in other Cree-Montagnais groups as well as elsewhere. It represents

the modern Montagnais groups for which we have data. Nəcugwuc is the form used at Lake St. John and Mistassini (Speck), nicoyus¹¹² at Escoumains (Speck), while Lemoine gives (ni) shikush. In these cases we find that one of two other terms is used for paternal aunt. At Davis Inlet and Lake St. John nduc¹¹³ is the term employed, recorded by Lemoine as nituss. At Escoumains noqumuc is used for both paternal aunt and paternal uncle.¹¹⁴ Now, although the manuscript dictionaries are not so explicit as one might wish in respect to the usage of the three terms already discussed, comparison with the usage among the Barren Ground people and the Cree reveals an almost exact correspondence. This enables us to reconstruct the aboriginal pattern, represented by the connotations of these terms, with a fair degree of accuracy. The deviations found in the other groups can then be interpreted as due to historically recent changes.

The pertinent data from the manuscripts may be conveniently summarized as follows:

<i>Favre</i>	<i>Silvy</i>
(ni) t8sis: tante, belle mère.	nit8sis: ma tante, belle mère.
(ni) sik8sis: tante.	nisigk8sis: ma tante.
(ni)chik8sis: tante, paternelle et maternelle, belle mère.	nichig8sis: ma tante paternelle.
(ni)chig8sis: tante, belle mère.	
(n)8k8mis: mon oncle paternel.	n8k8mis: mon oncle paternel.

The term nit8sis in these documents is the precise equivalent of the Cree term for mother's sister and father's brother's wife.¹¹⁵ This is likewise the present-day usage of the cognate term ntūc in the Barren Ground band. Consequently it seems fair to infer that the ambiguous terms "tante" and "belle mère," as used by both Favre and Silvy to explain this term, mean maternal aunt and step-mother (father's brother's wife). On this assumption the ancient kinship pattern contained separate terms for maternal aunt and paternal aunt, a fact that harmonizes perfectly with the data from other Algonkian languages, as well as with the more conservative dialects of the immediate linguistic division under discussion. The use of nduc for paternal aunt may thus be viewed as an extension in usage of the term

either a marked dialectical difference, or a mishearing of the sound. The use of this term for mother-in-law is unique.

¹¹² y = a back palatal spirant.

¹¹³ Strong writes this entuc. His en = n in the other orthographies. The same term is also used for mother's brother's wife in these bands.

¹¹⁴ Cf. "uncle" term in next section.

¹¹⁵ Morgan, n'do-sis (37, 38), n'-do-zis (39); Lacombe, n't'osis.

originally confined to mother's sister and probably father's brother's wife. In the cases already referred to, as, e.g., the Davis Inlet band¹¹⁶ and at Lake St. John, the term is used as well for father's sister and mother's brother's wife. It has become a general term for "aunt" in the English sense. That this wider application is more recent than the restricted one can scarcely be doubted.¹¹⁷

In the case of the term *nisik8sis* or *nichig8sis* we again encounter the explanation "*belle mère*" which, by analogy with modern Naskapi, Montagnais, and Cree, is most certainly "mother-in-law." In fact, we find cognates of this term throughout practically the whole Algonkian stock, so that its usage in this sense in the seventeenth century is incontrovertible. Its other connotation, paternal aunt, can scarcely be brought in question either. The Favre manuscript, it is true, is confusing on this point; since the maternal aunt is included,¹¹⁸ this may represent an extension of usage already in vogue, or a slip. But the widespread usage of cognates of the term for father's sister discounts this exception.

There remains the Escoumains case where *noqumuc* is employed for paternal aunt. This represents a peculiar turn of affairs since in the manuscripts and elsewhere among the Cree, Montagnais, and Naskapi speakers this is the ordinary term for father's brother. The Escoumains band are unique in that they use it for both relatives. They also have an equivalent term for both mother's sister and mother's brother.¹¹⁹ This practice is probably a fairly recent one, since there are no indications whatsoever that it represents an aboriginal pattern.¹²⁰

(b) *Cree*.—In these dialects the equivalence of the terms for mother-in-law, father's sister, and mother's brother's wife is clearly demonstrated in

¹¹⁶ Also for step-mother and father's father's brother's daughter (correspondence, W. D. Strong).

¹¹⁷ According to Lowie's nomenclature this involves a change from a Bifurcate Collateral to a Lineal type of terminology. See his Note on Relationship Terminologies (AA, 30:263-267, 1928).

¹¹⁸ But I may say that the explanatory portion of this entry has been tampered with, possibly with the idea of correcting it to paternal aunt.

¹¹⁹ See next section.

¹²⁰ Theoretically, however, it is of great interest; especially since Lowie, in the article referred to, bases his classification upon the logical possibilities involved in the designation of collaterals in the first ascending generation. He gives only four of these, but the case at hand suggests the need of a fifth that might be characterized as the Bifurcate Merging of Collaterals, as distinguished from the ordinary form of Bifurcate Merging where parents are classified with siblings of like sex. It would also be interesting to know whether similar cases have been reported and the conditions under which they have arisen.

Morgan's vocabularies.¹²¹ Lacombe, referring to *nisikus* as the term for mother-in-law, adds, "pareillement comme pour dire: ma tante paternelle." The term itself is the cognate of the usual Montagnais-Naskapi word for mother-in-law, which in the Barren Ground band and in the Favre manuscript, was also found to be the term for father's sister.

In so far as we can reconstruct the aboriginal Cree-Montagnais-Naskapi pattern from the foregoing facts, it is clear that there was a distinct term for mother's sister and possibly for father's brother's wife (step-mother?),¹²² and another one for father's sister. This latter term was also used for mother's brother's wife and mother-in-law. It has continued to be used in this last sense even in groups where the terminological distinction between father's sister and mother's sister has disappeared. The significant fact is that no other distinct term for father's sister seems to have existed in these languages during the period covered by our data. Consequently, terms having some other primary signification have been used for father's sister and mother's brother's wife. I have attempted to distinguish these more recent usages from what appears to be the older pattern. The same situation seems to have existed among the Ottawa, Algonkin, and Ojibway, where a cognate term was used for mother-in-law and father's sister at a former period and still exists among the more conservative groups. In certain other groups there arose the same sort of substitutions observed in the case of the Montagnais-Naskapi. Since the older pattern is the one that suggests cross-cousin marriage, it seems logical to draw the conclusion that the subsequent linguistic changes have followed the decline of this custom among certain Montagnais-Naskapi bands, while among the Cree the old terminology persisted, and in the case of the Barren Ground Naskapi, both the custom and the terminology.

7. FATHER-IN-LAW = MOTHER'S BROTHER = FATHER'S SISTER'S HUSBAND

(a) *Montagnais-Naskapi*.—The term *nis* is conventionally used by the Barren Ground people for all the above relatives. In contrast, the Davis Inlet group only employ it as a father-in-law term.¹²³ This is likewise the practice in the modern Montagnais dialects for which we have information, although in these cases the term appears with the dental replaced by the prepalatal sibilant and the diminutive suffix added: *ni'ci'c*, Lake St. John,

¹²¹ *nis-sī-goos* (37), *nis-se-goos* (38), *nī-se-goos* (39).

¹²² The term for father's brother's wife is usually the equivalent of step-mother in most Algonkian languages.

¹²³ More typically, according to Strong's table, for wife's father than husband's father. Women more frequently use the term *námácum*, i.e., grandfather. This parallels the use of the usual term "grandmother" for mother-in-law already referred to.

Mistassini (Speck); *nācāc*, Escoumains (Speck); (ni)shish (Lemoine). For mother's brother, and father's sister's husband, *nōkāmuc* is used at Lake St. John, Mistassini, and at Davis Inlet,¹²⁴ Lemoine reporting an identical term¹²⁵ for "oncle." In the French and English sense this is the actual usage of the term, since it includes father's brother and mother's sister's husband. At Escoumains, on the other hand, *ntus* is applied to mother's brother and mother's sister. We thus have an exact parallel to the usage of the terms for father's sister and mother's brother's wife described in the previous section. The information contained in the manuscripts and the Cree vocabularies likewise reveal a parallel nomenclature. Favre and Silvy give *n8k8mis* as the term for paternal uncle and this is the Cree term.¹²⁶ The more extensive usage represents a departure from the aboriginal pattern and is undoubtedly a modern development. This interpretation is borne out by the fact that Favre explains (ni)chis as "oncle maternal, beau père," while Silvy gives the former usage but omits the latter. Evidently in the seventeenth century there were separate terms used for father's brother and mother's brother. It is significant also that Silvy's term for maternal uncle is identical with the one Favre gives for mother's brother and father-in-law, the latter usage being the one that persists most widely today. No distinct term for mother's brother, that is to say, is reported.

The unique practice at Escoumains scarcely needs further elucidation here. The term *ntus* is the equivalent of (ni)t8sis in the manuscripts and in Cree, where it is primarily applied to mother's sister. Aside from the Escoumains, we have already commented on its use as a general term for "aunt" in other Montagnais bands. In the sense of mother's brother it certainly cannot be connected with the older kinship pattern.

The absence of documentary information about the term for father's sister's husband limits our temporal range of facts severely, but it seems plausible to suppose that in the aboriginal Montagnais-Naskapi kinship pattern this term was the equivalent of the one used for father-in-law and mother's brother. This reconstruction seems justified in view of the data available from the Barren Ground band and the Cree.

(b) *Cree*.—The coincidence of the terms for father-in-law and mother's brother in this linguistic division receives ample confirmation from the vocabularies collected by Morgan and Lacombe. The term employed is

¹²⁴ Strong writes this term *nōhōmic*. His *h* = the *k* of other students.

¹²⁵ *Nūkūmish*

¹²⁶ Morgan *no'-ko-mis* (37, 39), *no'ko-mish* (38), Lacombe, *n'okkumis*. Morgan gives identical terms for mother's sister's husband and step-father

cognate with the Montagnais-Naskapi series.¹²⁷ Lacombe, evidently struck with the dual signification of the term, writes: "mon beau-père, disent l'homme et la femme, c'est le même mot comme pour dire mon oncle maternel." It is only in Morgan's vocabularies that we find evidence of the triple equation in every case, the term for father's sister's husband being identical with that recorded for the other two relationships.

The correspondence between Strong's data from the Barren Ground band, the Favre manuscript, and the Cree equations just cited is very striking. This fact, together with the parallel equations for mother-in-law, father's sister, and mother's brother's wife, add additional weight to the conclusion previously drawn. In so far as we eliminate the usage of terms that appear to be relatively modern developments in certain bands, a kinship pattern is revealed which clearly reflects cross-cousin marriage.

In the discussion of Algonkin-Ottawa-Ojibway kinship terms in my previous paper¹²⁸ I was unable to draw any positive conclusions as to the ancient equivalence of the terms for mother's brother, father-in-law, and father's sister's husband. The difficulty arose from the fact that, although in one of the seventeenth century Algonkian manuscripts nichisens¹²⁹ was given this triple usage, in all the other sources the term given for father-in-law (ni·jini s, the equivalent for modern Ojibway) was distinct from the one given for mother's brother and the other relatives mentioned above. Where terms for father's sister's husband were recorded, however, these were identical with those for mother's brother.

It now appears that the old Algonkian term referred to above is cognate with the Cree-Montagnais-Naskapi term (old Montagnais, (ni) chis; Cree, nisis; Barren Ground Naskapi, nis) which has an identical usage. There can be no doubt that it is a very old Algonkian term. Sapir, e.g., stresses the fact that "there is a distinctive term in all Algonkian dialects for maternal uncle" which he reduces to *-si-ss (*-zi-ss, *-ji-ss-), possibly *-sa-ss (*-za-ss-).¹³⁰ The extended use of such a term, including father-in-law and father's sister's husband, can scarcely fail, therefore, to suggest a sociological explanation. It is also interesting to note that in Sapir's opinion the stem to which Algonkin terms for father-in-law can be reduced (*-sil-), the same being the basal element in the Algonkin-Ottawa-Ojibway term,

¹²⁷ Morgan, *nee-sis*; Lacombe, *nisis*. It will be noted that it is also used in the diminutive form. The stem is phonetically identical with the form as written by Strong.

¹²⁸ *Op. cit.*

¹²⁹ This term contains a double diminutive, a characteristic suffix in a number of Algonkian terms. Double diminutives of this term, however, occur elsewhere. Cf. Sapir, *op. cit.*, 22.

¹³⁰ Pp. 41 and 22, respectively.

is primarily not so much a noun stem denoting "father-in-law" as an old verb stem indicating the reciprocal relation of father-in-law to son-in-law or even the more general notion of kinship by affinity or marriage into another family.¹³¹

TERMINOLOGICAL EQUATIONS

	1 Woman's sister-in-law = woman's female cross-cousin	2 Man's brother-in-law = man's male cross-cousin	3(a) Sibling-in-law (of opposite sex) = cross-cousin	3(b) = Sweetheart	4 Son-in-law = cross-nephew	5 Daughter-in-law = cross-niece	6(a) Mother-in-law = father's sister =	6(b) = Mother's brother's wife	7(a) Father-in-law = mother's brother =	7(b) = Father's sister's husband	Total
MONTAGNAIS-NASKAPI											
<i>Modern</i>											
Barren Ground	×	×	×	×	×	×	×	×	×	×	10
Davis Inlet	—	—	—	—	—	—	—	—	—	—	
Escoumains	—	—	—	—	—	—	—	—	—	—	
Lake St. John	—	—	—	—	—	—	—	—	—	—	
Mistassini	—	—	—	—	—	—	—	—	—	—	
(Lemoine)	—	—	—	—	—	—	—	—	—	—	5
<i>Old (mss.)</i>											
(Favre)		×	×	×	—	—	×		×		
(Silvy)			×	×	—	×			×		3
CREE											
Prairie (M 37)	×	—	×		—	×	×	×	×	×	7
Woods (M 38)	×	—	×		—	×	×	×	×	×	7
Lowlands (M 39)	×	—	×		—	—	×	×	×	×	6
(Lacombe)	—		×			×	×		×		4

X = positive occurrence; — = negative; ? = uncertainty; a blank space indicates that information is not available from the source in question; proper names in parenthesis represent vocabularies for which an exact geographical location cannot be given; "M" refers to Morgan's schedules and the numeral which follows indicates the one which he assigned to the group cited.

Does it not seem likely that the use of the terms involving this stem belong to the same category as certain Cree-Montagnais-Naskapi terms for relatives by affinity, some of which were also cognate with Algonkin-Ottawa-

¹³¹ *Ibid.*, 26.

Ojibway vocables.¹³² These all proved to be more or less transparently descriptive and contain verbal rather than nominal stems as their basic elements. In view of the Cree-Montagnais-Naskapi material, it seems to me more than probable that the more highly descriptive vocable for the father-in-law relationship in Algonkin-Ottawa-Ojibway tended to displace *nichisens* in cases where the triple usage of this term weakened. And finally, the new term completely replaced the older one and became an established kinship term. If this hypothesis be adopted, we can assert that originally the pattern was identical with the Cree-Montagnais-Naskapi in respect to the equation mother's brother = father-in-law = father's sister's husband, and that cognate terms were employed in these groups. In both cases the equation also implies cross-cousin marriage, but, with the decline of this form of preferential mating, a new, or synonymous, term for father-in-law was adopted by the north-central Algonkian, whereas the Montagnais-Naskapi speakers in most cases clung to the old term for father-in-law but extended other terms for parents' siblings to mother's brother. The Cree alone maintained the aboriginal usage.

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¹³² See discussion of *nawi'tcawágan*, *ninšhagan*, and its derivatives; also *nahatcam*.

THE SCIENCE OF CULTURE

By GEORGE PETER MURDOCK

SOCIAL anthropology and sociology are not two distinct sciences. They form together but a single discipline, or at the most two approaches to the same subject matter—the cultural behavior of man. This identity has been all too frequently overlooked—by the general sociologists in their mad pursuit of the alluring mirages of social philosophy, methodology, and utopianism, and by the anthropologists in their eagerness to unearth before it is too late the facts of ethnography from which alone a general science of culture can be developed. If the anthropologists in many cases have failed to see the forest for the trees, the majority of the sociologists have yet to learn that such a thing as a tree exists. Nevertheless, the leaders in the various branches of these two allied fields, working independently, have succeeded in accumulating a respectable body of general conclusions based on inductive research. It is no longer admissible to spin out new theories of society and culture from the cozy depths of an armchair. We must start from the facts, of which an imposing mass has been assembled, and from the existing body of conclusions derived from the facts and verifiable by them. When this is done, and the deductions of armchair theorists are treated with the neglect they deserve, the apparent inconsistencies in the results of the reliable investigators in the several fields seem to fade away, and the broad outlines of an actual science of culture stand revealed.

That culture, a uniquely human phenomenon independent of the laws of biology and psychology, constitutes the proper subject of the social sciences, is a proposition accepted with practical unanimity by social anthropologists today. A large and increasing proportion of sociologists hold substantially the same position, and agree with Willey¹ that

the study of culture—the processes of its origin and its growth, its spread and its perpetuation—constitutes the study of sociology.

As regards the exact definition of culture, however, and its precise relation to the data of the biological sciences, certain vagueness still prevails. Even the brilliant analysis of Kroeber² has left the concept hanging in a rather mystical though splendid isolation. Recent studies in various fields, however, have shed new light on the subject, and there seems to be no longer any basis for the criticism that the concept of culture is baseless or “supernatural.” The differences in interpretation that exist are more ap-

¹ P. 208.

² 1917.

parent than real. They are for the most part differences in emphasis only, resulting from the fact that some authorities have stressed one factor and others another. It is the thesis of this paper that the various approaches are, actually, not contradictory, but supplementary; that their adherents err, not in what they assert, but in what they deny; that, in short, a true conception of culture will flow, not from the rejection of divergent points of view, but from their acceptance and reconciliation. After all, culture is a complex subject, and over-simple, particularistic explanations have gone out of fashion in the social sciences. It is here maintained, then, not that the students of culture should unite on some new concept, but that they are already in substantial harmony and need only to recognize that an adequate picture of culture emerges from a mere synthesis of their conclusions.

There is, in the first place, universal agreement—if we except the extreme racialists, eugenisists, and instinctivists—that cultural behavior is socially rather than biologically determined; that it is acquired, not innate; habitual in character rather than instinctive. Culture rests, in short, not on man's specific germinal inheritance, but on his capacity to form habits under the influences of his social environment.

Instinct and the capacity to form habits, while related functions, are present in any animal in inverse ratio.³

Habitual behavior, being more susceptible to modification as the result of experience, possesses a certain "survival value" which has led to selection in its favor during the course of organic evolution. Hence, in general, as we rise in the organic scale the proportion of specific instinctive reactions declines while adaptive behavior becomes correspondingly more prominent.⁴ The higher the animal, the fewer its instincts and the greater its ability to profit by experience. Man stands in this respect at the head of the animal world; he is the habit-forming creature *par excellence*.

If we neglect the vegetative . . . and the direct life conserving functions, such as attack and defense, there are few complete and perfect instincts in man yet observed.⁵

Briffault,⁶ following Fiske, has sought to explain the adaptability of man's behavior, its comparative freedom from fixation by heredity, by the immaturity of the human child at birth and the prolongation of infancy; the network of association fibers in the brain, he maintains, is organized under

³ Watson, 254.

⁴ Briffault, 1: 45.

⁵ Watson, 254.

⁶ 1: 96-110.

the influence of environmental factors before heredity, as it were, can complete its work. Be this as it may, however, no doubt exists of man's supreme habit-forming capacity and of its basic rôle in culture. The endeavor, fashionable among psychologists not long ago, to interpret cultural phenomena as the manifestations of an equipment of assorted instincts, is now completely outmoded, its *coup de grâce* having been dealt by Bernard.⁷ Man's habit-forming capacity, of course, has an instinctive or hereditary basis. The individual comes into the world equipped with a vast number of unorganized responses, which he gradually organizes into habits as the result of experience. It is through this "conditioning process" that cultural activities, like all other habits, are acquired. As Tozzer⁸ points out:

from the point of view of human culture we can eliminate everything but those characteristics of man which he learns from his fellow man.

The student of culture by no means denies the existence or importance of heredity. He accepts fully, and cordially welcomes, the immense strides being made by the science of genetics. He neither asserts nor denies that the laws of heredity, well established for anatomical and physiological traits, apply also to mental traits. This question, he believes, it is the province of psychology to decide. But he does deny that the laws of heredity can contribute to his understanding of cultural phenomena—phenomena which are in no respect hereditary but are characteristically and without exception acquired. The student of culture assumes heredity as a starting point, as a mere condition perhaps comparable to the geographic environment, and that is all.

Heredity merely underlies culture. It gives man the unorganized responses which are organized through the conditioning process into habits. It also furnishes him with the mechanism—the sensory, nervous, and motor apparatus—through which all behavior, acquired as well as instinctive, individual as well as social, finds expression. And finally, it probably provides him with certain basic impulses which urge him toward behavior that will satisfy them. The nature and number of these impulses, indeed their very existence, still need to be established by careful objective research. Nevertheless, the student of culture is probably justified in assuming them on the strength of their almost universal acceptance, although it is not his province to weigh the respective merits of the "wishes" of Thomas, the "dispositions" of Williams, the "drives" of Woodworth, the "socializing forces" of Sumner, the "residues" of Pareto, and the countless similar concepts of

⁷ 1924.

⁸ P. 56.

other writers. He assumes them, but he recognizes that neither they nor any of the other contributions of heredity determine or explain cultural phenomena. At best they merely direct human activities into certain main channels. Thus a sex impulse drives men to seek sexual gratification, and presumably underlies the marriage relation, while other impulses may similarly lie at the root of language, economic organization, religion, etc. The complexes of habit patterns which, in human society, surround the various impulses and their satisfaction are known as "institutions," which Allport⁹ correctly regards as clusters of "similar and reciprocal responses of a large number of individuals" rather than as entities in themselves capable of acting upon and controlling individuals. The institutions of economic organization, marriage, religion, etc., which recur in all civilizations because they presumably have their roots in hereditary impulses or drives, constitute in their ensemble what Wissler¹⁰ has aptly termed the "universal culture pattern."

It is of the utmost importance to note, however, that although heredity probably establishes the broad outlines of the universal culture pattern, it in no way determines the content of the latter. Heredity may enable man to speak, but it does not prescribe the particular language he shall employ. It may drive him to some form of sexual association, but the impulse may find adequate satisfaction in a wide variety of polygynous, polyandrous, and monogamous relationships. In short, culture owes to heredity only the number and general character of its institutions, not their form or content. Here, where environmental influences alone are at work, almost infinite diversity prevails. If we compare human behavior to a fabric in which heredity furnishes the warp and habit forms the woof, the warp remains everywhere much the same, for the student of culture is forced to recognize the essential

equality and identity of all human races and strains as carriers of civilization.¹¹

The woof, however, varies with the number and variety of cultural influences. Since the warp remains comparatively constant, cultural diversities are due solely to diversities in the woof. To continue the figure, in the lower animals, whose behavior consists in the main of instinctive responses, the woof of habit is so thin and scanty that it scarcely ever conceals the strands of the warp. To this is due the unfortunate but natural tendency of biological scientists, familiar with the overwhelmingly important rôle of heredity

⁹ 1927, p.168.

¹⁰ Pp. 73-97.

¹¹ Kroeber, 1915, p. 285.

in animal behavior and cognizant of man's animal ancestry, to assume that human behavior is necessarily similarly determined and to seek explanations of cultural phenomena in terms of race or instincts or other organic factors. They overlook the fundamental fact that, in man, habits, especially those of cultural origin, overlie the hereditary warp so thickly that it is extremely difficult to perceive the latter at all, as is evidenced by the endlessly conflicting attempts to reconstruct man's "original nature." The students of culture, on the other hand, agree that explanations in terms of heredity are inadmissible, and that an adequate analysis of culture must start with a recognition of the unique rôle of habit in human behavior.

Habit alone, however, is far from explaining culture. Many cultureless animals possess a considerable habit-forming capacity, and some of the mammals are in this respect not radically inferior to man. Social scientists agree, therefore, that culture depends on life in societies as well as on habit. Individual habits die with their owners, but it is a characteristic of culture that it persists though its individual bearers are mortal. Culture consists of habits, to be sure, but they differ from individual habits by the fact that they are shared or possessed in common by the various members of a society, thus acquiring a certain independence and a measure of immortality. Habits of the cultural order have been called "group habits."¹² To the average man they are known as "customs," and anthropologists sometimes speak of the "science of custom."¹³

The process of custom forming [as Chapin, p. 178, correctly states] is similar to that of habit forming, and the same psychological laws are involved. When activities dictated by habit are performed by a large number of individuals in company and simultaneously, the individual habit is converted into mass phenomenon or custom.

To the anthropologist, group habits or customs are commonly known as "culture traits," defined by Willey¹⁴ as "basically, habits carried in the individual nervous systems." The sociologists, on the other hand, almost universally speak of them as "folkways."¹⁵ General agreement prevails, therefore, that the constituent elements of culture, the proper data of the science of culture, are group habits. Only the terms employed are at variance.

Of the several terms, "folkway" possesses certain manifest advantages. "Custom" lacks precision. Moreover, though it represents adequately enough such explicit group habits as words, forms of salutation, and burial practices, it scarcely suffices for implicit common responses, mental habits,

¹² Smith, 82; Kroeber, 1928, p. 330.

¹³ See Benedict, 1929.

¹⁴ P. 207.

¹⁵ See Sumner, 1906.

or ideas, such as religious and magical concepts, which are equally a part of culture. The term "culture trait," though it covers both of these types of group behavior, is also used to include material objects or artifacts, which are not group habits, indeed not habits at all but facts of a totally different order. Artifacts are not themselves primary data of culture, as is shown by the recognized distinction between their dissemination by trade and the process of cultural diffusion proper.

Material objects [says Willey, p. 207] are considered as the outgrowths of habits; the material culture is transmitted, in the long run, in terms of knowledge of how to make material objects.

"Culture trait" thus suffers from a basic inconsistency which renders its use frequently misleading and conducive to confusion of thought. The inadequacy of the term is tacitly recognized by anthropologists when they point out the danger of considering artifacts apart from their cultural setting.

Articles of everyday use [says Herskovits, p. 241], which might seem identical to the museum worker, may be utilized for vastly different purposes by each of the several tribes which employ them and with entirely different emotional reactions.

The substitution of "folkway" for "culture trait" would obviate all these difficulties. The term has never been employed for artifacts themselves but only for the group habits which surround them—the processes of their manufacture, the styles of decorating them, the methods of using them, the current ideas about them, etc. The folkways, in short, supply the social setting. The acceptance of "folkway" by the science of culture would have the great advantage of reducing the data of the science to a single class of strictly comparable phenomena. These phenomena, moreover, are objective behavioristic facts susceptible of repeated verification—an absolute prerequisite for a scientific study. The attempt in certain quarters to build a sound scientific structure on the quicksand of unverifiable subjective facts, such as "attitudes," has proved singularly sterile.

A study of the behavior of man shows that actions are on the whole more stable than thoughts.¹⁶

What differentiates the folkway from the individual habit is primarily the intervention of society. Non-gregarious animals, whatever their habit-forming capacity, could not possibly possess culture. From this it results that culture is superindividual. Individuals, to be sure, are the carriers of

¹⁶ Boas, 148.

culture; a culture has no real existence save as it is embodied as habits in the nervous organization of the individuals who compose the group.

A culture is a system of interrelated and interdependent habit patterns or responses.¹⁷

Nevertheless, culture does not depend on individuals. An ordinary habit dies with its possessor, but a group habit lives on in the survivors, and is transmitted from generation to generation. Moreover, the individual is not a free agent with respect to culture. He is born and reared in a certain cultural environment, which impinges upon him at every moment of his life. From earliest childhood his behavior is conditioned by the habits of those about him. He has no choice but to conform to the folkways current in his group. Culture is superindividual, also, in the fact that its constituent folkways have in every case a history of their own, a history of their origin and diffusion which is quite independent of the lives and qualities of individuals. Even in the case of invention—the formation of a new habit which becomes a folkway when adopted by others—the individual is little more than the agent of social and historical forces. The study of parallel inventions¹⁸ shows that cultural innovations spring, not full-fledged from the brains of their reputed inventors, but from the cultural background or “cultural base,” in each case as a synthesis of many previous inventions.¹⁹

While each step in an invention is made by a specific individual, no step can be taken until necessary antecedents have been established, no matter what the abilities of the inventor. Because the inventor utilizes the transmitted culture and is limited by it, . . . it may be said that invention is superindividual.²⁰

This view does not deny or minimize genius, but simply maintains that it is irrelevant to culture. Even more clearly is the history of folkways superindividual. An innovation may spread or stagnate, have its rise and fall, undergo countless historical fluctuations and vicissitudes. But in any case, once launched into the stream of culture, it is beyond the power of any individual to control. Evolution in the folkways, as Keller²¹ has so overwhelmingly demonstrated, is governed by massive impersonal forces. Hence it is both possible and permissible to study the history of a folkway, or the evolution of culture in general, without reference to individuals or their organic and mental characteristics.

¹⁷ Willey, 207.

¹⁸ Kroeber, 1917, pp. 196–203; Ogburn, 80–102.

¹⁹ See Gilfillan, 530.

²⁰ Willey, 210.

²¹ 1915.

The fact that culture is superindividual lifts it beyond the sphere of psychology. As Lowie²² has expressed it:

the principles of psychology are as incapable of accounting for the phenomena of culture as is gravitation to account for architectural styles.

Psychology deals only with the individual. It can and does study his hereditary traits. It can also study the genesis of an individual habit, or of a group habit in the individual. As social psychology it can concern itself with the responses of the individual to his social and cultural environment. But it is powerless to explain the development of culture. No psychological laws can possibly account for the evolution of the radio, or the diffusion of the use of tobacco, or the spread of the commission form of municipal government. It is a matter of indifference to psychology that two persons, instead of one, possess a given habit, but it is precisely this fact that becomes the starting point of the science of culture.

Cultural phenomena, from their independence of the laws of biology and psychology, may be said to operate in a distinct realm—the “super-organic.” The concept of the superorganic, though named by Spencer,²³ was first consistently adhered to by Lippert,²⁴ and first clearly formulated and analyzed by Kroeber.²⁵ According to this concept, the phenomena of nature fall into three great realms: (1) the inorganic, where the chemical and physical sciences study the phenomena of matter and energy; (2) the organic, where the sciences of biology and psychology study living organisms and their organic behavior; and (3) the superorganic, where the social sciences study cultural and historical phenomena. The superorganic, to be sure, rests upon the organic, precisely as the latter rests upon the inorganic. But the science of culture is just as distinct, as to subject matter, laws, and principles, from biology and psychology as the biological sciences are from those of the inorganic realm. This point of view does not deny the fundamental unity of all nature, nor the legitimacy in each realm of utilizing to the utmost the knowledge acquired in the realm immediately below it, nor the possibility or even probability that the superorganic may be ultimately resolvable into the organic, and both into the inorganic. It merely maintains that natural phenomena are divided into three realms of ascending complexity, and that the data of each may be most profitably studied by its own students with their own methods and instrumentalities.

²² Pp. 25-6.

²³ 1: 3-15.

²⁴ 1886-87

²⁵ 1917.

Although it is society which intervenes between, and in large measure distinguishes, the organic from the superorganic, society alone, even in conjunction with habit, is insufficient to explain the existence of culture. As Kroeber²⁶ points out:

something more than gregariousness is needed to produce culture; otherwise cattle would possess it.

Society alone does not raise behavior to the superorganic plane, for, although many lower animals live in societies, none of them possesses culture.

In this respect a tremendous gulf separates man and the lower forms of life, the anthropoid apes and social insects not excepted.²⁷

The uniqueness of human culture is revealed by a comparison between man and the social but cultureless insects. A justly famous passage by Kroeber²⁸ will lose none of its luster by another repetition.

Take a couple of ant eggs of the right sex—unhatched eggs, freshly laid. Blot out every individual and every other egg of the species. Give the pair a little attention as regards warmth, moisture, protection, and food. The whole of ant “society,” every one of the abilities, powers, accomplishments, and activities of the species. . . . will be reproduced, and reproduced without diminution, in one generation. But place on a desert island or in a circumvallation two or three hundred human infants of the best stock from the highest class of the most civilized nation; furnish them the necessary incubation and nourishment; leave them in total isolation from their kind, and what shall we have? The civilization from which they were torn? One tenth of it? No, not any fraction; nor a fraction of the civilizational attainments of the rudest savage tribe. Only a pair or a troop of mutes, without arts, knowledge, fire, without order or religion. Civilization would be blotted out within these confines—not disintegrated, not cut to the quick, but obliterated in one sweep. Heredity saves for the ant all that she has, from generation to generation. But heredity does not maintain, and has not maintained, because it cannot maintain, one particle of the civilization which is the one specifically human thing.

The social phenomena of the ants are instinctive rather than acquired, transmitted through the germ plasm rather than through tradition, in short, biologically rather than culturally determined. All analogies drawn by enthusiastic biologists between human and insect or other animal societies, fall to the ground on this point. However striking the similarities may appear, they are never more than superficial.

²⁶ 1928, p. 330.

²⁷ Case, xxix.

²⁸ 1917, pp. 177–8.

The oft-cited parallel between human marriage and forms of permanent mating among certain lower animals, especially the birds, furnishes an excellent illustration of this fallacy. When a male and a female bird associate in a seemingly monogamous relationship, they do so because they are impelled by a specific mating instinct. It is an organic rather than a super-organic fact. Man, on the other hand, marries because in the course of his cultural evolution he has developed around his sexual impulse certain conventional taboos and restraints which leave marriage as the proper and socially sanctioned form of sexual association. The only organic fact involved is the sexual impulse or drive; a specific mating instinct is lacking. The impulse urges man only to seek sexual gratification; it does not even predispose him to contract a permanent union; the form of expression it takes is determined by cultural factors alone.²⁹ The almost infinite variety of marriage forms precludes the possibility of a specific mating, much less a monogamous, instinct in man. As Lippert³⁰ so aptly phrases it:

the institution of human marriage is not a subject of natural history but of culture history.

Nevertheless, the majority of writers on this subject have confused the organic and superorganic, perhaps none so persistently as Westermarck,³¹ who thus states his major premise:

The marriage of mankind is not an isolated phenomenon, but has its counterpart in many animal species and is probably an inheritance from some pre-human ancestor.

From such a premise he can only reach, for all his wealth of data and his serious scholarship, conclusions of the utmost unreliability. Yet many students of culture, with an amazing inconsistency, have accepted uncritically the results of a work which violates their every canon.

The analysis of social phenomena among the lower animals demonstrates that society, however essential, is insufficient in itself to explain culture. This fact needs to be stressed, for the danger is, not that the rôle of society may be overlooked, but that it may be overemphasized. Indeed, the tendency among sociologists in particular has been to single out society, not as an outstanding factor in culture, but as their very subject of study itself. Thus they commonly define their field, not as the science of culture, but as the "science of society." They ignore the fundamental distinction between the social and the cultural, which Stern³² has so clearly pointed out.

²⁹ See Sumner and Keller, 3:1495-8.

³⁰ 1931, p. 69.

³¹ 1:72.

³² 1929.

Allport,³³ too, though with a different object in mind, has repeatedly attacked what he calls the "group fallacy." Not society, but culture is the distinctively human phenomenon. Those sociologists who have overlooked this fundamental fact have spent their time seeking "social processes" common to ants, cattle, and men alike, and they have found little save abstractions distressingly suggestive of the "conation" and "cognition" which an outmoded psychology once accepted as realities. The sterility of their work, as reflected in the contempt for sociology manifested by scholars in other fields, shows that they have been on the wrong track. As a consequence, the social anthropologists, whose results have encountered anything but a contemptuous reception from historians and others, now find themselves joined by a rapidly increasing school of "cultural sociologists," who realize that the proper study of sociology is culture.

If society does not suffice to explain culture, just what is it which, when added to social life, has made possible the development of culture in the human race? Numerous writers have suggested human intelligence as the answer to this question. It has frequently been pointed out that man's typical manner of adapting himself to his environment differs significantly from that of the lower animals. His characteristic mode of adaptation, it is suggested, is mental, that of the animals, physical. The development of one great physical adaptation, the human brain, has rendered unnecessary any further important physical specialization, since it enables man, for example, to invent fur clothing in the Arctic instead of developing a fur coat of his own, or to invent an airplane instead of growing wings. On the basis of this distinction Keller³⁴ defines culture as the "sum or synthesis of mental adaptations." Biological scientists (e.g., Tilney, 1931) go even further in stressing the importance of the human brain and human intelligence. But important as this factor unquestionably is, it by no means suffices to explain culture, and it has probably, like society, been considerably overemphasized.

The distinction between animal and man which counts is not that of the physical and mental, which is one of relative degree, but that of the organic and social, which is one of kind.³⁵

Recent studies³⁶ have clearly demonstrated that the anthropoid apes possess intelligence, "insight," or "ideation," of an order comparable to that of man, inferior only in degree; that both apes and men, for example, solve

³³ 1924 and elsewhere.

³⁴ P. 21.

³⁵ Kroeber, 1917, p. 169.

³⁶ Kohler, 185-224; Yerkes, 575-6.

problems by intelligent behavior as opposed to the mere trial-and-error learning characteristic of the rest of the animal world. Yet, in spite of their intelligence, the apes lack culture.

A realistic view of human culture indicates that the rôle of intelligence is smaller than many have assumed. It is a truism of psychology and almost a matter of general knowledge that the chief use of the human mind is the invention of reasons or justifications for our beliefs and actions. The science of culture has suffered much in the past from rationalization or wishful thinking, and it should be among the first to minimize the importance of intelligence in human affairs. Comparatively little intelligence is needed to acquire a habit or folkway, none to preserve it.

Most habitual responses [says Bernard, 1926, p. 34] occur on a relatively low level of consciousness.

Intelligence probably plays a more prominent part in the life of the individual than in that of society. At any rate, practically the only social process in which it demonstrably plays a significant rôle is invention. Yet it is a fact that apes also invent.

With the ape inventive but cultureless, the question arises whether we have not perhaps hitherto exaggerated the importance of invention in human culture. We are wont to think of it as the creative or productive element in civilization. We tend to view the other processes in culture as essentially those of transmission, preservation, or decay. The idea of progress, which has so powerful a hold on the unconscious as well as the conscious thought of our day, may have led us to overemphasize the rôle of invention. Perhaps the thing which essentially makes culture is precisely those transmissive and preservative elements. . . .³⁷

While it would be absurd to deny intelligence any importance in culture, the evidence clearly suggests the need of a search for other factors.

"That which distinguishes man from animals," says Anatole France, "is lying and literature." This aphorism expresses, with a characteristic twist, a widely if not universally recognized truth. The underlying idea, in more prosaic terms, is that man differs from the animals in the possession of language, which undoubtedly goes far to explain his possession of culture as well as his propensity for both forms of story-telling. Kroeber³⁸ has shown that the lower animals completely lack true language. Their cries, unlike human speech, are instinctive rather than acquired, organic rather than social. They convey to other animals, not objective ideas such as most human words represent, but merely subjective emotional states,

³⁷ Kroeber, 1928, p. 340.

³⁸ 1923, pp. 106-7.

such as suffering or sexual excitement. Thus they are comparable only to such words as the "ouch" uttered by a man unexpectedly pricked with a pin.

Since culture is not innate, it must be acquired anew by each individual and transmitted from generation to generation. It is this transmission of folkways which insures the continuity of culture in spite of the impermanence of the individual. The folkways thus transmitted constitute what is called the "social heritage" of the group. But culture is not only continuous, it is also cumulative.³⁹ New inventions and acculturations from without are added to the stream of culture in each generation, and in most cases the new does not displace the old. Thus we still retain wine in spite of the later invention of distilled spirits, and both in spite of Prohibition. The stream of culture, the social heritage, thus shows a definite tendency to grow richer and fuller with the passage of time. This does not mean that cultural acquisitions are never lost, but the "lost arts" of antiquity are few by comparison with the arts which have survived alongside newer inventions.

Both the transmission and diffusion of culture require some means of communication. Imitation alone seems insufficient. To be sure, certain songbirds, when reared in the nests of another species, are said to acquire and transmit the songs of their foster-parents. But except for such crude germs, nothing resembling a social heritage exists among the lower animals. What gives language its importance in human culture is the fact that it alone, with its derivatives such as writing, seems to provide an adequate means of communication. It alone makes possible the transmission of folkways, the continuity and accumulation of culture, the very existence of a social heritage. Without language, man would be little better off than the animals, as is proved by studies of deaf-mutes and other speechless persons.⁴⁰ In a society without language, each individual would have to begin exactly where his parents began; he could possess only individual habits, not group habits; his behavior, in short, would be confined to the organic level.

Many authorities have recognized this fundamental rôle of language in culture.

The cultural life of man [says Stern, p. 267] as distinguished from the social life of sub-human groups is dependent on articulate language. . . . The most important influence of language on social life is derived through its making possible the accumulation and transmission of culture. Recent studies in sub-human animals, especially of anthropoid apes, reveal the presence of many factors upon which culture

³⁹ See Tozzer, 9.

⁴⁰ Briffault, 1: 23-40.

depends, learning, inventiveness, memory, even the beginnings of symbolic abstraction. But the absence of an articulate language prevents cultural life in the sense possessed by men.

If the transmissive and preservative elements in culture are basic, says Kroeber,⁴¹

then the indispensability of speech to the very existence of culture becomes understandable. It is the communications, perhaps, more than the thing communicated, that count. At any rate the fact that speech, to the best of our knowledge, is as thoroughly wanting among the anthropoids as is culture, tends to confirm this conception.

Four factors, as we have now seen, have been advanced by various writers, and have received wide recognition, as explanations of the fact that man alone of all living creatures possesses culture—namely, habit-forming capacity, social life, intelligence, and language. These factors may be likened to the four legs of a stool, raising human behavior from the floor, the organic level or hereditary basis of all behavior, to the super-organic level, represented by the seat of the stool. No other animal is securely seated on such a four-legged stool. Many live in societies. Some manifest no mean intelligence and habit-forming capacity. None, however, possesses language. Just as no one or two of these factors alone can suffice to explain culture, so no animal can maintain an equilibrium on a stool with but one or two legs. All four legs seem necessary to attain the level of the superorganic, and man alone possesses all.

The case of the anthropoid apes is particularly instructive. They possess three comparatively well-developed legs of the cultural stool, lacking only language. And they appear to hover on the very verge of culture. Köhler⁴² has described the fads which occur with great frequency in groups of chimpanzees. From time to time one of these restless and curious animals makes an invention or discovery, e.g., sucking water through a straw, painting objects with white clay, catching ants on a twig moistened with saliva, teasing chickens by offering bread in one hand and jabbing with a sharp stick held in the other, or climbing rapidly to the top of a pole planted vertically on the ground and jumping off before it falls. The rest of the group then takes up the innovation by imitation, and for days or weeks the new practice rages with all the vigor of a recent fashion among humans, only to disappear after its novelty has worn off. While the fad lasts, it is certainly

⁴¹ 1928, p. 341.

⁴² 1925.

a group habit, an incipient element of culture. Only the absence of language, apparently, prevents the retention and accumulation of such acquisitions and their transmission to succeeding generations as a social heritage. Chimpanzee fads, in short, differ from human folkways only in their impermanency. Kroeber⁴³ would therefore seem to be wrong when he states that they possess no "residuum of unmitigatedly cultural material." Little more than a time element differentiates the chimpanzee use of straws from the modern American folkway observable in soft-drink parlors, or the ape's use of the "jumping stick" from human pole vaulting. The chimpanzee seems to be in the position of a man insecurely perched on a four-legged stool of which one of the legs is wanting. He can preserve a precarious balance only for a short time before the stool overturns and plunges him and his incipient culture once more to the organic floor.

The well-informed reader will find little that is new in the foregoing, little indeed that is not already widely accepted among students of culture. But this is precisely the purpose of the article, namely, to demonstrate that an adequate conception of the nature and basis of culture already exists and needs only to be recognized. The various partial interpretations of culture, stressing some of the basic factors and neglecting or even denying others, turn out upon examination to be not mutually exclusive but complementary. The general recognition of this fact should go far toward clearing the air of dogmatism and laying the foundation for constructive coöperative effort in solving the manifold problems of the science of culture.

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⁴³ 1928, p. 326.

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THE archaeologist finds it expedient to work backward from the known to the unknown, in his task of reconstructing the past from its surviving vestiges of material culture. The technologist (or specialist), coming on the scene to reap the fruits of the other's labors, with perhaps a small contribution of his own by way of justification, is not committed to this topsy-turvy order. His is the privilege of taking the farthest point established by the other, and of proceeding in logical fashion forward. Indeed, he may, if he wishes, disregard the time element utterly, and outline the hypothetical course of development of the object of his study upon purely internal evidence; but in that course he must rely upon the archaeologist and the ethnologist for ultimate justification. He can prove little by this method, but he may suggest something of value to those who concern themselves more with the chronological and historical aspects of the matter under scrutiny.

Thanks largely to the archaeologist, Southwestern ceramics can be traced from a point which certainly is not far removed from its very beginning to the present day. Basketry can be studied over an even longer time range, although as the older art it has a still more obscure point of origin. Weaving, the third member of this triad of basic aboriginal crafts, is still far from yielding the uttermost secrets of its origin; its entire chronological sequence cannot yet be traced in any area. Hence this paper presumes merely to attempt an outline of its probable (or at the very least, its plausible) technological evolution in America. Evolution there must have been, for certainly nobody would cite the loom as an example of spontaneous invention.¹

¹ Surprisingly little attention has been paid to the development in America of the machine that clothes the world today. Appreciation of the significance of ceramic evolution, for example, is manifest in most writing on that subject in the field of American prehistory; but there is little in the literature of that field to dispel the feeling that the loom—most complex of aboriginal devices—"just happened." W. H. Holmes was keenly alive to the many evidences of textile development in America, and Clark Wissler in chapter 3 of his *The American Indian* gives an excellent summary of the types of weaving native to America. Most other writers characterize as "loom" any device employed in making textile fabrics, and dismiss the subject forthwith. Otis T. Mason, for example, for all his penetration in the study of basketry, was less sensitive to the various aspects of its offspring, weaving. In his article on Weaving in the *Handbook of American Indians* he ventures the opinion that the vertical loom of the Southwest is a hybrid device of mixed Chilkat and Spanish character; and in the article on Blankets in the same work he marvels that the Chilkat blanket weaver used no shuttle. Weaving on a loose-hanging warp, without heddles, she could not possibly have used a shuttle.

THE ORIGIN OF WEAVING

The assumption that weaving had its origins in basketry is well justified. In its cruder phases, some of them persistent even today, the similarity leaves no doubt upon that point. The distinction between the two crafts is often an arbitrary one, based upon form and use rather than upon method of construction. The fine twined sea-grass basket of the Attu islander is truly a woven fabric; yet its process of manufacture is called basketry. The mat of the same people is almost identical structurally; yet because it is a flat object of much greater size, we do not hesitate to call it a specimen of weaving. Plaiting, a common method of basket-making, is identical with plain weaving. Twilling occurs in both weaving and basketry, for it can be done mechanically as well as by hand. Twining is essentially a hand technique; yet we speak of twined weaves. Where then shall the line be drawn? Until the process is mechanized, or some flexible material which cannot easily be manipulated with the hands alone is introduced, form and function must be determining factors. Weaving as a technique distinct from basketry may be said to begin where the fineness or the flexibility of the material employed compels (or at least renders advisable) a resort to some device which facilitates manipulation of the component fiber.²

Exceptions will occur, as in the case of the basket woven bottom-uppermost upon a supporting stake, and form and function must decide the question. Not until true mechanical weaving upon the loom comes into the complex can we always be entirely sure of our ground. That, however, is a relatively late development, marking a high point of achievement; for the finest woven fabrics the world has ever seen, whether Gobelin tapestry or Oriental rug, can be duplicated on the loom used in the Southwest centuries before European influence came in.

THE SUPPORTING STAKE

The present study takes as its thesis the proposition that weaving differentiates itself from basketry at the point of introduction of a device to facilitate manipulation of the material employed.³ The germ of loom development therefore appears—on purely technological grounds, be it remembered—to lie within the stake upon which the Attu basket and others of the Northwest Coast area are woven. It is significant in this connection that the basket woven on a stake is of material extremely fine and flexible,

² Wissler, p. 25, offers a similar criterion: the use of a twisted or spun fiber.

³ Mason, p. 10, points out that basketry has two fundamental classes: coiled, which leads to the needle, as he puts it, and woven, which leads to the loom. Only the latter class is involved in a study of loom development.

which has greater need of support than the coarser materials usually employed. Willow splints, for example, are rigid enough to retain the position in which they are placed, and in their use no support is needed.

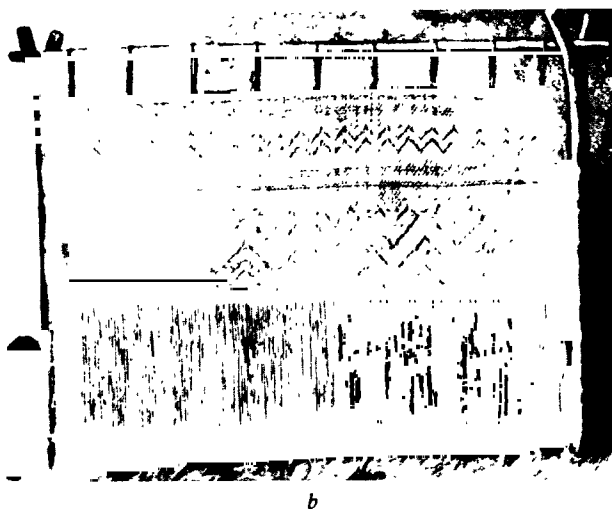
The first step toward the loom, then, was probably dictated by the limitations of the available material. In all aboriginal crafts, for that matter, the material influences the technique quite as much as the technique affects the material. Stones which will not wear down are flaked; stones which will not flake are shaped by abrasion. The plasticity of clay, the tendency of bone to split to a pointed end, the sturdy pliability of wood, have largely determined the form and function of objects wrought from these substances. Applying this principle to the textile crafts, it is natural to find that those materials which are easy to manipulate are handled without a supporting device; those which are too fine and flexible to maintain themselves in the process of manufacture are artificially controlled. The determination to make use of such fibers despite the difficulties inherent in their structure may well have been that spur of necessity which mothered the invention of the loom.

Closely akin to the supporting stake method of basket-weaving is the manner of making twined bags of buffalo hair with either a hair or a bast warp. This technique, of which little notice is found in the literature of American anthropology, is widespread among the Central Algonkian and Southern Siouan peoples, the Osage in particular having it highly developed.⁴ In this type of weaving the radial warp of the bag-to-be is suspended by a cord from overhead, bottomside up, and the weaver completes the fabric by twining the weft upon the warp foundation. (See pl. 3a.) The buffalo hair used is hand-spun, commonly by rolling it upon the thigh with the bare hand. This form of weaving employs no special devices except the means of suspension. It is an early form and like most such was probably widespread in America. There is reason to believe that the Basketmaker of the Southwest employed it in making twined bags of yucca and apocynum; and Kidder (p.623) thinks the extraordinarily complex sandal weaving of these early people was done in almost identical fashion by suspension of the warp from a central point. (See fig. 1.)

THE SUPPORTING FRAME

From the supporting stake to the supporting frame, or from single-point to multiple-point suspension, is no great step. The two are used side by side in the Northwest Coast area—the region which affords the most abundant

⁴ I am indebted to M. R. Harrington for information on this point.



a. Suspended warp basket-weaving. After Mason.
b. Chippewa weaving frame. After Mason.

illustrations of the steps precedent to loom weaving. The stake offers only a single point of support. A mat or blanket could not be woven upon it for that reason. Planting another stake alongside and stretching a cord, or laying a pole transversely between them, provides an adequate framework for mat weaving. Strips of fiber are suspended from the transverse cord, and upon this warp web every device known to weaving—plaiting, twining, twilling, with their manifold variations—can be practiced. (See pl. 3*b*.) This simple structure will do the work of a loom; but it is not by any means a loom, only a supporting frame upon which every step in the weaving process must be performed slowly and laboriously, handling each separate strand of warp, one by one.

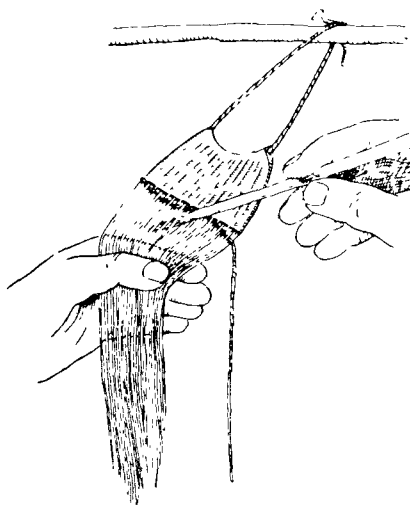


FIG. 1. Probable method of sandal weaving, Basketmaker period. After Kidder.

Despite its theoretical possibilities, the weaving frame has its practical limitations. Its warp strings dangle loosely and tangle easily.⁵ To work a complicated pattern upon this shifting skein would be a slow and difficult process; to press home the individual strands of the weft, with no counter-resistance to the pressure, an exasperating and laborious task. The device is well suited to the function to which its highly practical users applied it: the weaving of coarse mats of rough bast, in the main. In this function it

⁵ The Chilkat weaver's practice of making a little ball of the surplus ends of her warp (which are to form the fringe of the blanket) by tying them up in a membrane bag may serve a purpose in keeping the strands untangled, besides keeping this protected portion clean. If so, the device would be analogous to the weighted warp of the Old World, of which I can find no trace in America.

was widely distributed, probably throughout North America, wherever a suitable plant fiber grew in sufficient abundance to provide the requisite raw material.⁶

The weaving frame was adapted to the use of a fine fiber, wool, in a single known type of aboriginal American weaving, the Chilkat blanket of the upper Northwest Coast. Wool of the Rocky Mountain goat is used as weft, with a warp of cedar bark and wool together. This use of a coarse bast warp gives a certain rigidity to the structural foundation, in part overcoming the handicap of the free-hanging lower end. For the rest, the slow process of twining is employed, but it is done with such care and versatility in weft manipulation that the Chilkat blanket is justly renowned. No one would hesitate to call it a textile in the ordinary sense of that word.

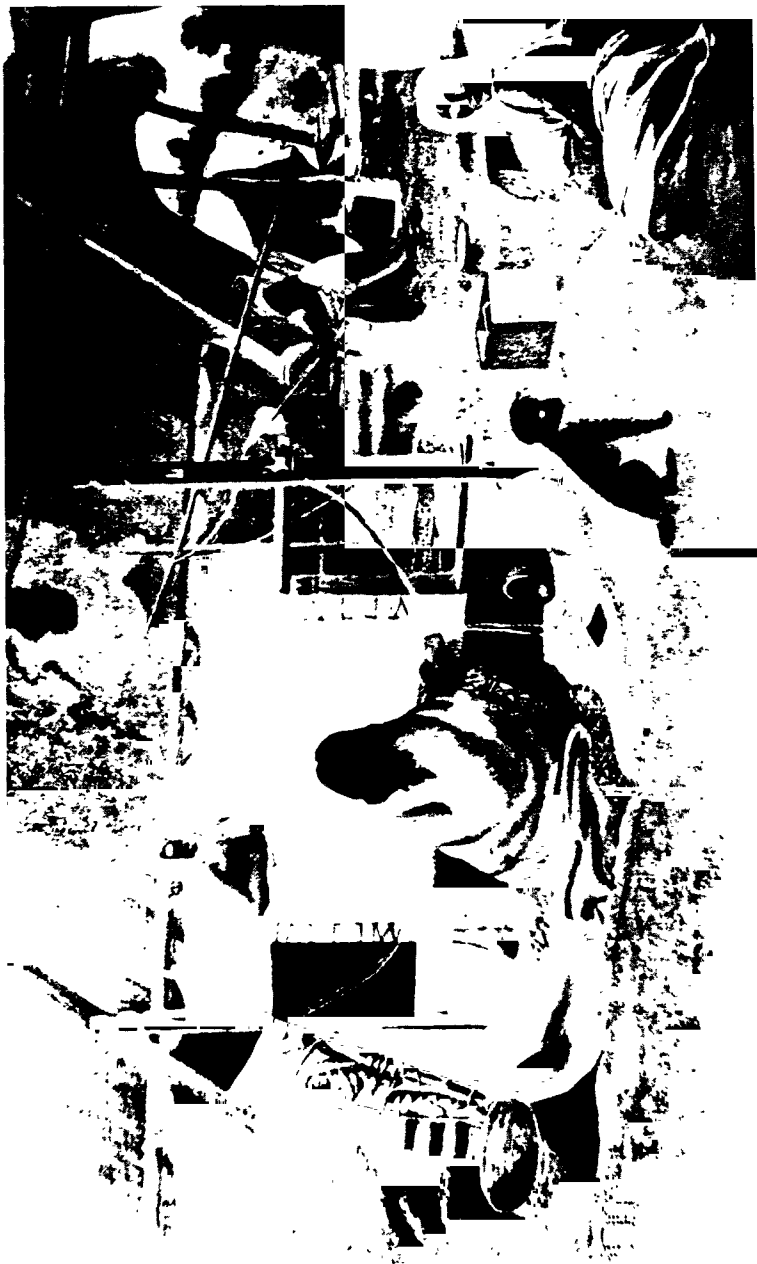
THE FIXED-WARP FRAME

The Northwest Coast affords another prototype of the loom, which in one respect is distinctly nearer to it than is the free-warp frame on which the Chilkat blanket is woven. The Salishan peoples of the region about the mouth of the Fraser and the Columbia rivers used the wool of a domestic dog, bred for the purpose, on a rig which at first glance appears to be a true loom. It comprises two horizontal bars, an upper and a lower, fixed at an interval of perhaps three feet to two upright posts. The wool warp is wound around these two bars in a continuous strand. Thus a rigid warp is secured and the apparatus would be a loom if it had heddles. Having none, it is merely a weaving frame of more specialized type than any yet considered; the weft is worked into the warp by hand, crossing one warp strand at a time. Illustrations of this device show that unbattened or "basket" weaving was done upon it, and that the fabric grew from the top downward.⁷ (See pl. 4.) In the true loom progression is invariably upward, or away from the weaver, as will be seen.

Three important developments characterize the Northwest Coast types of weaving. One is the rigid-warp frame of the Salish just described. Another is the use of wool, a far more satisfactory textile fiber than the usual basts. The third is the occurrence in Chilkat blanket weaving of a technique

⁶ Holmes, 1884, figures pottery from the Southwest, the Mississippi basin, and the Eastern Woodlands area, showing impressions of textiles which are matting, for the most part. Hoffman, 1896, describes the process of mat making by the Menomini. Mason, 1904, figures a weaving frame of the Chippewa. Wissler, 1922, mentions the device among the Ojibway and the great Algonkian family in general. Further search would doubtless yield much more evidence of distribution.

⁷ See Kissell, 264, and Curtis, 9: 72.



a
Salish weaving frame.

(called tapestry weave when practiced on the true loom, although I am not certain of the applicability of the term to twining, except that the tapestry effect is produced as effectively as in loom weaving) which effaces the warp and gives the weaver's fancy free play in weft design. Each of these developments will be discussed in turn.

It has been seen that the simplest devices for weaving—the supporting stake for basketry, the suspension point for making twined bags and sandals, and the matting frame—have in common a free-hanging warp. They have likewise in common a strong association with twining, a rudimentary hand technique, as opposed to the in-and-out weaving which is characteristic of the loom. The transition from free-hanging warp to rigid warp marks an important step in advance. There can be no true loom weaving without rigid warp, just as twining is impracticable, if not all but impossible (except by placing the twined strands at broad intervals, as was done in making the fur and feather blankets so common in the Southwest), on any but a loose warp, it is a technique requiring considerable manipulation of the warp strands, and taut strings reduce this freedom of movement very greatly. The weaver's craft is readily divisible into two broad phases of development: the first might be called the free-warp phase, beginning with the basketry stake and ending with the Chilkat weaving frame, the second, the fixed-warp phase, with the Salish frame above described as its first step and the true loom its culmination.

WOOL AND ITS PREPARATION

The use of wool is the next development for discussion.⁸ Wool is not merely just another fiber; it is a material which requires special processes. Notably, it should be carded, and it must be spun. Carding straightens the tangled short hairs, while spinning welds them into a smooth, continuous strand, as fine or as coarse as the spinner may desire, and of unlimited length. Carding is simply a process of combing. It is not indispensable, and in fact was dispensed with in Chilkat blanket weaving, the hair or wool being formed into a rove by rolling it on the thigh. The Salishan weavers often carded their fiber by combing, but it seems to have been for the purpose of mingling the fiber of milkweed or nettles, or the down of birds, with the wool of the dog.

Holmes (1896, p. 21) comments as follows on the significance of spinning in the development of the textile crafts:

⁸ Technically, the term wool includes cotton, which as Wissler points out (p. 43) is a true wool, not a bast, despite its vegetal origin.

The use of simple strands or parts in textile art precedes the use of spun threads, but the one use leads very naturally to the other. In employing rushes, stems, grasses, etc., the smaller strands were doubled to secure uniformity of size, and when a number of parts were used they were combined into one by twisting or plaiting. In time the advantage in strength and pliability of twisted strands came to be recognized, and this led to the general utilization of fibrous substances, and finally to the manufacture of suitable fibers by manipulating the bark of trees and plants. Spinning was probably not devised until the weaver's art had made considerable advance, but its invention opened a new and broad field and led to the development of a magnificent industry. Semi-rigid fabrics served for a wide range of uses, as already described, but soft and pliable cloths for personal use and ornament were made possible only by the introduction of spinning.

Spinning, or twisting the individual strands into a thread, is an essential process in weaving in wool. In its simplest form it may be integral with the process of roving by rolling the hank of wool on the thigh, pulling it the while to produce a thinner and more elongated form. This is the technique of preparing buffalo hair for making twined bags; but the Northwest Coast weavers had advanced beyond that stage. They used the spindle, a specialized device of world-wide distribution.⁹ (See fig. 2.) This vital adjunct to weaving in wool comprises a shaft and a round weight, commonly of stone, clay, or wood, slipped over one end of the shaft like a collar. The weighted end of the spindle is commonly placed on the ground, and from the other end the instrument is twirled—either in the fingers or by rolling it along the thigh or shin. The whorl (weight), besides holding the wool in place on the shaft, acts as a fly-wheel, retaining the momentum of the twirl and giving an even movement to the revolving shaft. The free hand of the spinner manipulates the carded or roved wool, which is being wound upon the spindle and pulled and twisted into a continuous thin strand in the process.

Another important accessory to wool weaving is the comb. Its purpose is to straighten and press home the fine woollen strands after they have been enmeshed in the warp. On theoretical grounds the comb probably originated in the awl or bodkin of the basket-maker—an implement with but one point. The comb is only an awl with multiple points. It works no better than the other, but it does work faster; and it is completely specialized, be it remembered, whereas the awl is an implement of many and various uses.

THE TAPESTRY WEAVE

Last of the three developments characteristic of Northwest Coast weaving previously referred to is the tapestry weave: it has had a great influ-

⁹ Hooper figures spindles from ancient Egypt, Greece, India, Africa, and several American countries. All are remarkably alike. (See Hooper's pl. 2 or our fig. 2 taken from Hooper.)

ence upon the development of textile design. In the open or "basket" weave the warp is everywhere visible; the weaver must take it into account in

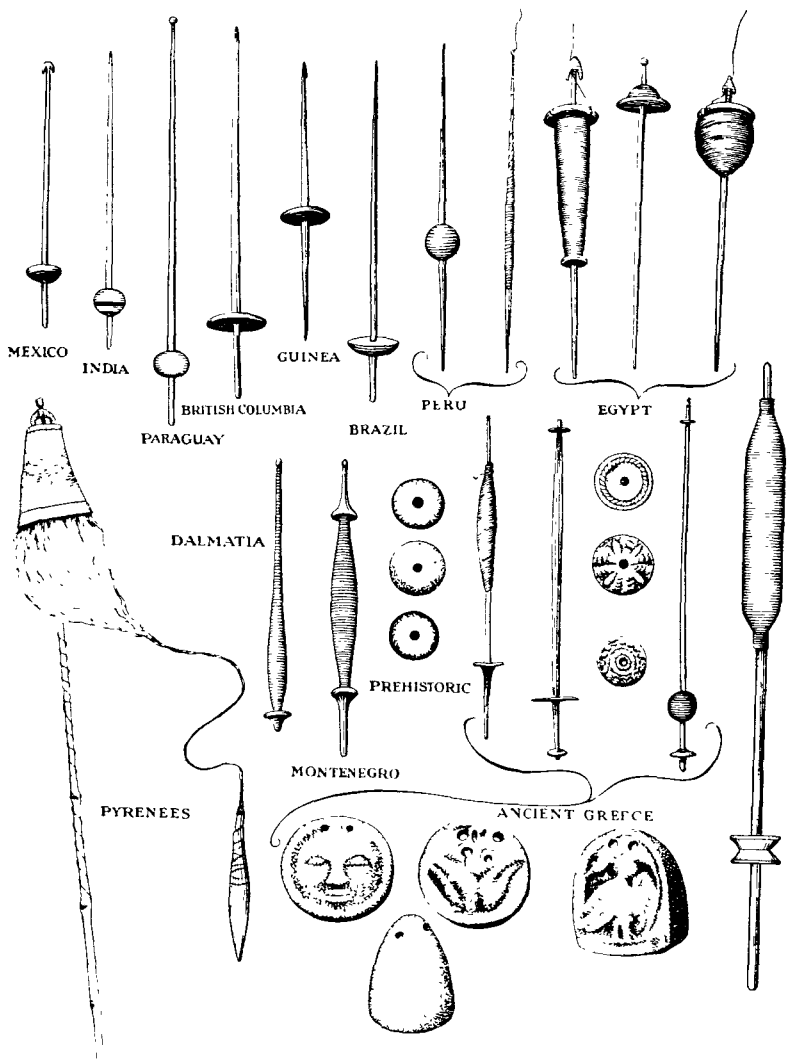


FIG. 2. Primitive spindles. After Hooper.

creating her pattern. For that reason she cannot achieve a solid figure of any considerable size, the nearest possible approach to it being a checkerboard outline produced by contrasting colors in warp and weft. This limitation of

effect by structure is not without broad possibilities of its own, to be sure. In the "basket" type of weaving it was common practice to use different colors in the warp web with a single color of weft. Thus, wherever unicolored weft met multicolored warp a visual contrast resulted, and with this the weaver fashioned her designs by manipulation of the strands of various hues into orderly arrangements.

In belt loom weaving as practiced by the Navaho and Pueblo today, and by primitive peoples the world over, the many possibilities of the use of warp color in design are illustrated. Study of any specimen will reveal this significant limitation, however: warp color is invariable in the individual strand, throughout its entire length. A pattern featuring white warp at the beginning of weaving must continue in white to the very end. As a consequence, patterns in which warp color occurs—whether in "basket" weave or in tapestry weave with raised warp effects, as exemplified by the woven belt or sash of the Pueblo and the Navaho—tend toward a constant repetition of the unit figure along the straight lines of the warp: structural considerations have a dominant effect upon the design.

Weft, on the other hand, can be manipulated freely, its color changed at will. Hence in the "basket" weave the color of the warp must always be reckoned with, while in the tapestry weave it can be ignored entirely. The latter offers far more freedom in design, with consequent greater stimulus to development of that important factor in the textile crafts. This stimulus must in turn have fostered progress toward the true loom, manifesting itself in a desire to employ fine-textured fibers that lend themselves most readily to complexity of design. To employ such fibers an auxiliary device of some sort was obviously a necessity—and the true loom was the ultimate outcome. It must be borne in mind that in weaving, unlike pottery, for example, design is integral with structure. Method and material both have their influence upon pattern.

The weaving of the Northwest Coast seems to mark very clearly the point of transition from bast to wool, and to exemplify a long stride toward the true loom. The Chilkat blanket—technically the cruder type, although it is much the finer product, as a rule—has a warp of wool and bast, a weft of wool. It is woven on the old primitive matting frame, and the method of its weaving is the ancient basketry technique of twining. The Salish type, on the other hand, employs the rigid warp, and an all-wool material (with some exceptions, as noted, in which other materials are intermingled). In both the direction of weave is downward. Taken together they bridge a broad gap on the long road from the supporting stake to the loom.

Little by little, in this series of steps in a postulated development, weav-

ing is drawing away from the ancient craft of basketry, emerging into full light to take its place in the trinity of fundamental industries: basketry, weaving, and pottery. Its requisite special appliances have come into being—the rigid-warp frame, the spindle, and the comb—which make possible the use of fine fibers in tapestry weaving. The true loom lies not far ahead; yet one more step must be noted before it can take its place in the series, and of this step Peru offers the only example yet recorded to my knowledge.

THE NEEDLE LOOM

On the authority of Joyce (p. 200), the loom of early Tiahuanaco times in Peru was a fixed-warp affair like that of the Salish but much smaller. (See fig. 3.) A further point of resemblance lies in the fact that it was used

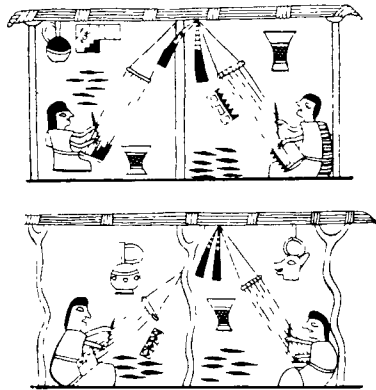


FIG. 3. Peruvian needle loom. After Mead.

in plain weaving, not in hand twining. Joyce calls this device a needle loom¹⁰ because long slender needles worked the weft (of cotton or Andean camel wool) into the warp web.¹¹

¹⁰ An illustration, copied from Tello's *Peru Antigua*, is shown in Mead (p. 38). (See our fig. 3.) It is from a Peruvian vase painting, hence subject to chronological assignment.

¹¹ A process somewhat similar is reported from the Osage, as quoted by Holmes, 1896, pp. 25–26, from Hunter: "The hair of the buffalo and other animals is sometimes manufactured into blankets; the hair is first twisted by hand, and wound into balls. The warp is then laid of a length to answer the size of the intended blanket, crossed by three small smooth rods alternately beneath the threads, and secured at each end to stronger rods supported on forks, at a short distance above the ground. Thus prepared, the woof is filled in, thread by thread, and pressed closely together, by means of a long flattened wooden needle. When the weaving is finished, the ends of the warp and woof are tied into knots, and the blanket is ready for use."

"The loom is a machine," says Washington Matthews in his *Navaho Weavers*. He might have said yet more: that the loom is the only machine aboriginal America ever produced.¹² To make the loom a machine it wanted but one thing: a device for mass manipulation of the warp web, in other words, the heddle. The heddle marks the true loom.

At first thought this type of weaving frame seems no great advance toward the true loom, for the needle is a common implement and a very ancient one. Yet the long Peruvian needle, capable under deft manipulation of lifting a number of alternate warp threads and thus forming a shed for the passage of the weft, assumes considerable significance. Heretofore we have had no inkling of a means of handling more than one strand of warp at a time. Weaving has been specialized, already in this series, to a high degree; but now it is about to become mechanized, and that is the ultimate step.

ORIGIN OF THE TRUE LOOM

In the present state of our knowledge one can only speculate upon the time and place of origin of the true loom in America. Peru would be a good guess, for there only, so far as known, has the needle loom come to light. There too the use of cotton, always associated with the true loom, was known in needle loom times. The heddle loom, or true loom, follows the needle loom closely, and it is quite possible that archaeological research in Peru will settle the matter. If not Peru, then Middle America; for we have every reason to believe that the loom came into the Southwest through the Pueblo culture, along with cotton; and cotton, as a cultivated plant, is associated with Middle America in the most generally accepted theory of the New World origins of agriculture. In speculating upon this point it is highly significant that nowhere in aboriginal America, so far as known, can the true loom be dissociated from cotton, nor cotton from corn.¹³

BATTEN AND SHUTTLE

The batten, a blade-like stick used in pressing down the weft strands to produce a tight fabric, follows the heddle more or less as a matter of course.

Fur blankets were commonly made in the Great Basin and the Southwest by staking out the strips of furred hide which formed the warp, and twining in the weft at broad intervals—a similar, though more rudimentary, technique.

The "long flattened wooden needle" referred to above may be ancestral, technologically, to the batten.

¹² With the possible exception of the two mechanical drills—bow and pump. I cannot learn whether they are aboriginal. Wissler (pp. 132-134) thinks they are not.

¹³ The possibility of an exception to this statement must be noted: the Cherokee may have had a true loom, independently invented, used with a bast (apocynum?), not a wool. See page 23.

Until a shed could be opened in the warp web it could serve no purpose: the comb did the pressing home, over a small area, which the batten does over a larger area. The comb remains useful in straightening out twists and snarls in the weft, and in weaving those last few inches of fabric wherein space is so constricted that the batten has no room for movement. The latter has a function apart from that of tightening the fabric, however, it serves, when turned sidewise within the shed, to hold it open while the weft strands are passed through. In this situation a shuttle would be of distinct service if weaving were being done in solid colors or plain stripes. New World fabrics show a great preference for figured patterns, however, and a completely specialized shuttle was never evolved. The long needle was used as a sort of shuttle in Peru; but it is probable that the prehistoric Pueblo, like their modern descendants and the adept pupils of the latter, the Navaho, rolled their weft yarn into a little ball for greater ease of handling, or at best used a twig (an extemporaneous needle, as it were) for the purpose.

We may be grateful that the shuttle did not come into use. Its effect upon design is deadening, encouraging as it does a monotonous passing back and forth of the weft which gives at best but an unimaginative pattern of plain stripes. The shuttle tends toward rapid progress in weaving but not, certainly, toward elaborate design. Witness for example the Chimayo blanket and the modern Saltillo sarape, both woven on the Old World horizontal loom with foot treadles for heddle manipulation, and a thrown shuttle for rapid intercalation of the weft. In them the mechanical factor in loom weaving comes too much to the fore: the art of weaving sinks to the level of a mere craft, over-mechanized, monotonous in method and scarcely less so in result.

DIRECTION OF WEAVE

Two matters remain for comment before this brief study of loom development in America will have covered its allotted ground. The first has to do with the direction of weave, whether downward or upward. The basket woven upon a stake grows downward, as do the twined bag, the mat with free-hanging warp suspended between two upright stakes, and the Chilkat and Salish blankets. Were it not for the latter, woven upon a rigid warp, it could be stated axiomatically that free-hanging warp and downward weave go together, rigid warp and upward weave together. When the warp hangs free, the fabric must necessarily grow from the bound end to the free end. When the warp is made rigid by fastening both ends, however, as in the Peruvian needle loom and the true loom wherever found, the direction of weave immediately changes, with the single exception of the Salish blanket.

The reason for this change of direction seems obvious. Gravity alone would ultimately dictate the method eventually adopted. Weaving is a process of piling threads or strands of fiber one upon another within the clasp of a warp web. It is naturally desirable that each new thread added to the fabric lie upon the firm foundation of others similarly laid, rather than hang suspended in air until another one can be inserted to maintain it. The batten is another reason for upward rather than downward weaving: it is natural to draw downward, or toward the body, rather than to push upward, away from the body, greater pressure can be brought to bear, with less exertion. The emergency brakes on our motor cars operate on this principle.

THE WAIST LOOM

The final point of technical character has reference to the method of suspension of the loom. It may be said at the outset that the horizontal loom is unknown in aboriginal America. The loom for belt or sash weaving is sometimes a rigid frame (often of such simple character as the forked limb of a tree, however) which can be laid flat on the ground and operated horizontally, but in fact is generally inclined at an angle which suits the convenience of the weaver by leaning the frame against a vertical support.¹⁴ Usually, however, belts, sashes, garters, etc., were woven on a waist loom.

The waist loom is the most common early form of the true loom, and it is neither vertical nor horizontal, but diagonal. The weaver suspends it at a height which will present the warp web at an angle convenient to her hands, when by attaching the lower or free end to a cord around her waist, she draws the loom taut.¹⁵ This type of loom was used extensively in aboriginal America. It was common in Peru, for a number of complete looms have been found¹⁶ and the great majority of Peruvian fabrics, like those of the prehistoric Pueblo, are of such slight width that, inferentially, they were woven on the waist loom. Matthews' illustration of the Aztec weaver, from the *Codex Vaticanus*, proves the existence of this loom in a dominant culture of Middle America.

For the prehistoric Pueblo we have a vast number of fragmentary cotton textiles, evidently loom-woven,—none of them, on the authority of Walter Hough (p. 257), wider than 26 inches. There is evidence even more specific,

¹⁴ A frame of this type from the Navaho is illustrated in Shufeldt, p. 394.

¹⁵ Matthews has illustrations of the waist loom as used by the Navaho (pl. 36), the Zuñi (pl. 37), and the Aztec (fig. 59). In each case the loom has an angular position, varying from the near-horizontal to the near-vertical. Logically, the weaver's own preference, rather than rule or custom, would determine the inclination.

¹⁶ I have notes on two in the Brooklyn Museum catalogue nos. 27732 and 28846.

however: Neil M. Judd found seven sticks in Kiva D at Pueblo Bonito which beyond reasonable doubt are the end bars of waist looms. Only two could be saved, and these I examined, through Mr. Judd's courtesy, in the National Museum (catalogue number 335284). They are of about $1\frac{1}{2}$ inches diameter and respectively 24 and 25 inches long. Each has a knob at either end, precisely as in Matthews' illustration of the Aztec weaver. These knobs, which are integral with the stick itself, probably served to keep the ropes by which the loom was suspended at either end from slipping off the stick.

A characteristic of fabrics woven on the waist loom is the long seam which indicates that two narrow strips have been sewn together (sometimes loom-joined) to form one wider piece. The cotton textile fragment from Mesa Verde figured in Nordenskiöld's plate L shows such a seam, as do several fragments in the P. G. Gates collection of prehistoric Pueblo material in the Southwest Museum. Thus we have fairly good evidence that the waist loom was in common use in the prehistoric Southwest.

THE VERTICAL LOOM

The wide distribution of the waist loom is well established. What of the vertical loom, the type that is suspended from above and lashed or weighted down at its base? Logically it might be considered the earlier type, by reason of the facts that the frames for weaving mats and hand-twined blankets are always vertically hung,¹⁷ and a custom so long established would not be lightly broken. On the other hand, the adjustability of angle of the waist loom is a great point in its favor, particularly in such fine work as that done on the Peruvian needle loom. It seems probable that the latter is the immediate predecessor of the true loom, and that it set the fashion of diagonal suspension at the very outset. In that case vertical suspension would be a revival, or perhaps a regional survival, of an earlier custom.

There is strong reason to conjecture that the vertical loom had its origin in the Southwest, perhaps as a regional survival. The American Museum of Natural History has an object (catalogue number 29.1./4581) from a cave in Cañon del Muerto which at first glance appears to be a miniature loom, such as the Navaho make today for the tourist trade. Its warp web is strung between two sticks each about 12 inches long, the selvage ends being bound to the sticks with a spiral winding of cord, precisely as the Navaho and the Hopi attach their warp web to the horizontal supporting bars. Here the resemblance ends, for this specimen is not a loom, but a twining frame.

¹⁷ Necessarily so. free-hanging warp cannot be made to take any but a vertical position.

The evidence is incontrovertible, consisting in several rows of weft twined about the warp strings at intervals of about 2 inches. Yucca fiber is the material of this fabric, which is structurally identical with the fur blankets of the Great Basin and the Southwest. The piece is more of a net than a solid fabric, because of the wide spacing of the twined weft; in that respect it offers additional evidence that close-set twining cannot be done on a fixed warp, as previously pointed out. Whether this interesting specimen is attributable to the Basketmaker or the Pueblo culture horizon unfortunately is not known; hence it is impossible to determine whether it is a predecessor or a contemporary of the true loom. The significant fact remains that here is a device for twining, but with a rigid warp suitable for vertical suspension;¹⁸ and like the vertical loom, so far as known, its occurrence is limited to the Southwest.

There is considerable evidence of the use of the vertical loom by the prehistoric Pueblo. Until quite recently this evidence consisted in loom holes and overhead supports found in ruins, usually in kivas, where, traditionally, the men did the weaving of the village. Judd (pp. 24, 28, 31, 34) found a number of loom holes at Betatakin, more often in living rooms than in kivas; (his fig. 18 shows a loom anchor in place in the floor.) Kidder and Guernsey report loom holes, often with anchor loops still intact, from various cliff dwellings in northeastern Arizona (pp. 60, 70, 73 and figs. 22 and 26), saying on page 60, that

there can be little doubt that these series of loop holders served as attachments for the lower bars of looms.¹⁹

It is true that none of the series mentioned had a length of more than four feet, the holes being usually about one foot apart, and arranged in a straight line. Four feet, however, is a considerable width, particularly when it is remembered that a loom of even greater width could thus be secured by allowing the lower bar to project beyond its floor lashings.

It is difficult to reconcile loom lashings four feet in extent with textiles not exceeding 26 inches in width. Yet Hough's statement, referred to above, was incontrovertible at the time it was made, so far as I can learn: neither loom, nor poles, nor fabrics, which could be associated with a greater width had come to light in the Southwest. In the summer of 1929 Earl Morris

¹⁸ The waist loom can be vertically hung, as proved by the vertical narrow loom on which the Hopi today weave their broad cotton sashes; and it is reasonable to conjecture that the broad vertical loom grew out of the fashion of suspending the waist loom vertically.

¹⁹ Little doubt indeed, as will be seen by consulting Mindeleff, wherein are described (pp. 132-133) and figured (figs. 27 and 31) loom attachments of identical form and position in modern Hopi kivas.

made a find in Cañon del Muerto which strengthens the case for the broad vertical loom. Wrapped about the mummified body of a man—a weaver, to judge by the many hanks of spun cotton yarn in the grave—was a large white cotton blanket of plain “basket” weave,—precisely such a blanket as a modern Hopi weaver might produce. It was recently on display at the American Museum of Natural History, where I was permitted to open the case and by working my ruler around the bundle a few inches at a time, to measure the width of the blanket. It measured, perhaps a bit inexactlly, 58 inches in width. The length could not be determined because of other wrappings.

Thus the existence of the broad vertical loom among the prehistoric Pueblo is all but proved. It would be a difficult task indeed to weave a fabric five feet wide on a waist loom;²⁰ and aside from that, we have the evidence of the loom holes and lashings of prehistoric time, identical with those of modern times.

Pottery accompanying the burial described above was of the Mesa Verde type. Beyond a doubt, the old weaver was wrapped in his blanket and laid in his grave several centuries before European influence came into the Southwest. With the final statement that this cotton blanket was identical in every detail of construction with the woolen blankets of the Hopi and the Navaho of today, the aboriginal American art of weaving is brought down to the present time. “In the Southwest,” as Lummis said, “we can catch our archeology alive.”

LOOM DEVELOPMENT IN THE OLD WORLD

It is interesting to compare the development of the loom in the Old World with its progress in America. Hooper's admirable paper, already cited, makes this quite easy in summarized form. The great similarity of spindles had already been noted. (See fig. 2.) In Europe, as in America, bast is the earliest fiber found in use: the Swiss lake dwellings have yielded numerous fragments of linen cloth, plain woven; but of the loom employed we are told little except that weights have been found, indicating a free-hanging, weighted warp. Egypt too used linen in early times, and on a true loom, vertical, identical in all chief particulars with the vertical loom of the Southwest. (See fig. 4.)

²⁰ There is at least a suspicion that the broad vertical loom was used in pre-Columbian Peru. O'Neale and Kroeber (p. 29) mention a textile 47 1/2 inches wide, and several more than 40 inches wide. I have seen several of more than 40 inches, including one of 48 inches, in various museums. That is rather an awkward width for waist loom weaving, but we cannot say it is impossibly wide. Archaeology eventually will settle the point.

Perhaps most interesting of all is the loom on which Penelope wove the funeral pall of her father-in-law Laertes, while awaiting the return of

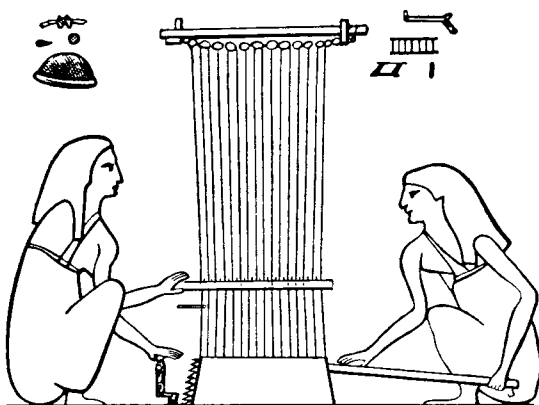


FIG. 4. Egyptian vertical loom. After Hooper.

Ulysses, as depicted on a Grecian vase of about 500 B.C. (See fig. 5.) It is very much like the proto-loom of the Chilkat blanket. The warp hangs free, weighted at the lower end, and the fabric grows downward from the top. Whether Penelope had the benefit of heddles is not clear; probably she used long slender needles, as in the Peruvian needle loom. At any rate, she has achieved a complex pattern which is not suggestive of twining.



FIG. 5. Penelope's loom. After Hooper.

Even this brief sketch will have shown that the principal weaving devices of the two hemispheres bear a remarkable similarity; but of their independent origin there can be no doubt. It is hardly likely that more than the bare outline of the development of the loom can ever be revealed in Europe.

In America, however, thanks to the aridity of such important archaeological areas as the Peruvian highlands and the Southwest, there is good hope of recovering the whole story, apart from the fact that in North America to-day primitive weaving processes are in actual practice which exist not even in the memory of man in the Old World.

TRUE LOOM DISTRIBUTION IN NORTH AMERICA

The distribution of the true loom in aboriginal North America is another point of interest. The existence of the waist loom among the Aztec has already been noted. Holmes (1884) figures forty-four examples of textile impressions: from the Southwest, the Mississippi Basin, and the Eastern Woodlands. Only five of them could have been loom woven; the rest are hand twined, or are basketry fragments. Of the five, one is from Utah (pre-historic Pueblo), one from Ohio, one from New York, two from Tennessee. One of the latter is twilled, the only twill in the lot. This evidence, slender but extremely extensive, associates the true loom with the higher cultures of the region now the United States—the prehistoric Pueblo and the Mound Builder, notably. It indicates further that in so far as Holmes' material is characteristic of conditions prevailing among the makers of his pottery fragments, true loom weaving was in a very small minority in comparison with the various hand techniques revealed by the pottery impressions.

Holmes mentions elsewhere (1896, p. 11) that "spindle whorls have in rare cases been reported from southern localities." Finally, among the scant bits of evidence of true loom distribution in aboriginal North America, we have an inkling that something very closely approaching the true loom was in use by the Cherokee. Holmes (1896, pp. 23-24) quotes Adair as follows:

Formerly the Indians (Cherokee) made very handsome carpets. They have a wild hemp that grows about six feet high, in open, rich, level lands, and which usually ripens in July; it is plenty on our frontier settlements. When it is fit for use, they pull, steep, peel, and beat it; and the old women spin it off the distaffs, with wooden machines, having some clay on the middle of them,²¹ to hasten the motion. When the coarse thread is prepared, they put it into a frame about six feet square, and instead of a shuttle, they thrust through the thread with a long cane, having a large string through the web, which they shift at every second course of the thread.

This shifting at every second course of the thread suggests that the "large string through the web" was in fact a heddle of the most rudimentary and simple form. The "frame about six feet square" may have been a broad vertical loom, having a framework of posts, like the loom of the Southwest. The whole description inclines one to believe that here is a true

²¹ The common type of spindle is easily recognized in this description.

STEPS IN THE DEVELOPMENT OF TRUE LOOM WEAVING

<i>Device</i>	<i>Product*</i>	<i>Material*</i>	<i>Occurrence*</i>
1. Supporting stake	Fine woven basketry	Sea grass Cedar root	Aleutian Islands Northwest Coast
2. Suspending cord (pl. 1a; fig. 1)	Twined bags Sandals (?)	Buffalo hair Apocynum, yucca	Great Plains Basket Maker (?)
3. Matting frame (pl. 1b)	Mats, bast fabrics	Barks, rushes	Mississippi Basin Northwest Coast
4. Weaving frame	Chilkat blanket	Wild Material	Upper Northwest Coast
5. Rigid-warp frame (pl. 2)	Salish blanket	Wild goat wool, cedar bark	Salish of Lower Northwest Coast
6. Needle loom (fig. 3)	Narrow fabrics	Dog wool, fine fibers, down	Peru, Tiahuanaco Period
7. Heddle or true loom (fig. 4)	Blankets, sashes etc.	Andean camel wool, cotton	Peru, Middle America, Pueblo, Mound Builders (?)
Upward		Domestic	Navaho

* Product, Material, and Occurrence, are typical rather than inclusive; the list could be lengthened by further research.

† The close correspondence of the bracketed groups will be noted, as they fall into two divisions: first, downward weave, free warp, and wild material; second, upward weave, fixed warp, and domestic material.

loom of the simplest form possible, one which employs a bast (probably a species of apocynum) instead of a true wool. Was it an independent development, or a borrowing from the loom presumably developed in Peru or Middle America? Another point for the archaeologist's attention.

Viewing the textile development of aboriginal North America in general, in so far as our scanty knowledge permits, one gets the impression that everywhere experiments and developments were in process that were tending inevitably toward the loom, in most cases quite independently of one another. Some sort of device to facilitate weaving is found nearly everywhere. A variety of basts were in use, ranging from very coarse to very fine. Both hair and wool were frequently employed, and spinning had developed its own special technique and accessories. The Salishan peoples had progressed to the point of using a rigid warp in plain "basket" weaving—but they knew not the heddle. Of true loom weaving there is no definite evidence until cotton seemingly sweeps northward from "somewhere south." On the crest of that wave, to all appearances, rode the true loom.

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SOUTHWEST MUSEUM

LOS ANGELES, CALIFORNIA

FEASTS IN NEW
IRELAND; THE SOCIAL
FUNCTION OF EATING¹

By HORTENSE POWDERMAKER

EATING has an important social function among any people. Groups of people eating together on a particular occasion, whether it be a mortuary feast in a primitive society or a birthday dinner party in our own culture, illustrate the point that eating is a social institution as well as an individual physiological necessity. In the primitive society of New Ireland, social life in its ritual, and in many of its non-ritual aspects also, centered around feasts. This term includes not only those occasions when food is eaten communally, but also when it is only distributed, and in this paper denotes any communal rite (and non-ritual occasion) centering around food. The two most important communal events are dances and feasts. Only the latter are being considered in this paper.

SOCIAL FUNCTION OF EATING

The communal eating of food and customs concerning it may be said to have a double social function: (1) to maintain the cohesion of the society and of groups within it; (2) to determine, in part, the relation of the individual to the society and to the smaller groups within it. The psychological theory underlying the first function is that society maintains its existence by a system of sentiments which are given collective expression on ritual occasions.² In this society the most frequent of these are feasts.

¹ This article is based on an ethnological study of a Melanesian society on the island of New Ireland in the Bismarck Archipelago. The author lived for ten months in the village of Lesu (phonetic spelling; the spelling on government maps is Lossu) on the east coast about eighty miles from the northern end of the island, and attempted a rather intensive study of a relatively small group of people, one linguistic unit of five villages each with a population of between two and three hundred, covering an area of ten or twelve miles. The research was conducted under the auspices of the Australian National Research Council, and the author is now preparing the material for publication as a Fellow of the National Research Council (United States), under the sponsorship of Dr. Clark Wissler.

² Professor Radcliffe-Brown has expounded this theory in *The Andaman Islanders* (Cambridge, 1922). He says pp. 233, 234: "(1) A society depends for its existence on the presence in the minds of its members of a certain system of sentiments (an organized system of emotional tendencies centered about some object) by which the conduct of the individual is regulated in conformity with the needs of the society. (2) Every feature of the social system itself and every event or object that in any way affects the well-being or the cohesion of the society becomes an object of this system of sentiments. (3) In human society the sentiments in question are not innate but are developed in the individual by the action of the society upon him.

Members of the society come together at a feast to welcome a new member, to mourn the loss of an old one, to mark a change in the social status of the individual through circumcision, menstruation, or marriage, to note the return to the society of a member after a temporary withdrawal through illness, and before a communal enterprise such as war. Should there be a rift occasioned by a quarrel, it is the coming together over food that mends it.³ On all these occasions society manifests its unity. While the rites vary according to the event, food is a common denominator of all of them.

The feast provides not only an opportunity for the society to express collectively those sentiments which maintain its existence, but it also serves more concretely as the occasion for the transaction of much of the business and social (apart from ritual) life of the community. It is at the feasts that trade is carried on. Payments are made for objects and services, and future trading operations are arranged. On the same occasion individuals and groups exchange gifts. A feast also frequently becomes a meeting where matters of importance are discussed. Finally, it is a sociable occasion for both sexes, when jokes and gossip are exchanged.

The second function affects the relation of the individual to his group and the relation between several individuals. The native's explanation of why he gives a feast is that he must do so to gain prestige. Rather does he put it in a negative way, that, unless he gives a feast on any of the occasions which demand one, he will be a person of no account: everyone will talk about him in a derogatory fashion, saying that he has no food or wealth, and is not able to give a feast. To a native this kind of gossip is most noxious; a lowering of his prestige must be avoided at any cost, and the number and the size of the feasts he gives are most important in affecting his position.

(4) The ceremonial customs of a society are a means by which the sentiments in question are given collective expression on appropriate occasions. (5) The ceremonial (i.e., collective) expression of any sentiment serves both to maintain it at the requisite degree of intensity in the mind of the individual and to transmit it from one generation to another."

Professor Radcliffe-Brown has applied this theory to Andaman society and has described the various ritual occasions in the Andaman society which serve to maintain and strengthen these sentiments. He has not, however, applied his theory or mentioned it in connection with feasts. His theory of the social value of food is that "food is a possession of the society, that not only the power to obtain food, but also the power to use it without danger is something that the individual owes to society, and that the bestowal upon him of this power involves the acceptance on his part of corresponding obligations" (p. 278). This theory deals with the social value of food itself and how society overcomes the danger resulting from the social value. The above article is concerned with quite a different aspect, namely, the social function of eating.

³ This is just the final mark that the quarrel is over. Preceding the feast there is an exchange of 'sery (currency) between the two disputants.

Around food also is focused much of the prestige of an individual in his family. Here a man's standing is largely dependent upon his ability as a food provider and the woman's upon her industry in preparing the food. Failure on the part of either partner to fulfill these obligations is sufficient cause for a divorce.

SOCIAL ORGANIZATION

Before describing the feasts and showing the way in which much of life centers around food, it is necessary to give a very brief description of the essentials of the social organization. There are two exogamous moieties, the Eagle and the Hawk, which are subdivided into clans. Descent is matrilineal, the clan consisting of an extended family, all related through the female line. The next kinship unit in order of size is the individual family, which may be monogamous, is frequently polygamous, and occasionally polyandric.

On the basis of locality the largest unit is the village. In the district where I lived there are five villages forming one linguistic unit. This is not and never has been, as far as I could observe, a political unit. In the past, warfare was frequent between the villages and there neither was nor is one chief for all of them, each having its own. The village is subdivided into hamlets,—Lesu into fifteen. Residence is matrilocal and so a hamlet will usually have many female members of the same clan. The hamlet has from two to seven or eight houses, each one having its communal cooking ground and generally a cook house also, for use on rainy days. With the exception of the very small ones, a hamlet has its own cemetery and men's house.

The society is agricultural. Gardening, fishing, hunting wild pigs, and cooking are the main everyday occupations. Trading is important and carried on according to exact and traditional rules. The familiar Melanesian gift-exchange is also practiced.

FREQUENCY OF FEASTS

After living in this society for only a short time, one is impressed by the great frequency of feasts. The following is a list of occasions on which they are held.

Occasion	Name
Pregnancy.	anang asil tsɛŋ (eating for infant)
Birth.	Grumɣsi (name of dance performed by women at this rite)
Giving name to infant	Basisis (name)
Several months after birth if infant is strong.	anang asil wɛtwɛt tsɛŋ (eating for strong infant)

At appearance of first tooth	anang asɿ nuji (eating for tooth)
After ritual washing of a girl at her first menstruation	tsɿ tsɿ (name of leaf used in washing)
Marriage.	mɑɾɿ (name of playful fighting occurring between women of opposite moie- ties at this time)
Circumcision	Lual inɿ tsɿ saukɿ (feast for cutting penis)
Recovery from illness	Bis Bambullɿ (make taro die ⁴)
Going away a long distance	anang atɿ basiɿ ap (eat and go)
Feast at death	Koserɿ lual (Make feast)
Feast some time after death has oc- curred	Koserɿ lual mau tungän (free translation: make feast for dead; literally, im- plies feast is held on ground where men are buried)
Malanggon ⁵ rites	Koserɿ lual (make feast)
To make arrangements for future ma- langgon rites	äginlənɿt bul (mark pig)
To end quarrel	ɿembii (finish)
Before war ⁶	Lual tanta bul mɑɾɿ (feast to bring fight)
To make peace between warring villages	ɿembii (finish)
Feast given for possible mates of fe- male infants	anang tsing tsɿ (eating play)
When there is abundance of food	ɿnɿnɿn aLɿt (food much)
To repay women who helped an ill woman	anang oba (eating, communal work)
To repay workers on a house or garden fence	anang oba (eating, communal work)
At completion of my house ^{6a}	tsɿali anuɿ (open house)

During the ten months of my visit I attended eighty-five feasts, a large majority of which took place in the village of Lesu. The others occurred in neighboring villages, but were also attended by Lesu people.⁷

The eighty-five feasts fall into the following classes:

Feasts at death 9

⁴ The tops of this taro are thrown away and not replanted as is usually the case.

⁵ Malanggon is the name of an elaborate carving displayed at certain mortuary rites.

⁶ Warfare has been abolished by the mandated government and the feasts connected with it are therefore no longer held. The feast before war and the one to make peace between warring villages are the only ones on the list which were not held during my visit.

^{6a} This feast was called by a different name from the one ordinarily used to repay the workers on a native house, and is really an introduced element in the culture.

⁷ Not included in this number is the communal eating on the part of the men every day for several weeks after a death. These might well be considered ritual feasts, but I have included only those which mark a very specific occasion, such as those in the foregoing list.

After death feasts	32
Nineteen of this number were connected with the display of malanggons.	
Circumcision rites ⁸	8
In payment for economic services	5
These were to repay workers who had built a house or made a garden fence.	
Women's feasts	11
Those at which the women eat or where the food is distributed to them. The latter is the more frequent occurrence. The men do not eat at the women's feasts. They may be further analyzed as follows: birth, 4; pregnancy, 1; circumcision, 1; menstruation, 1; marriage, 1; malanggon, ⁹ 1; end of dance rehearsals, 1; payment to women who had helped a sick woman of opposite moiety, 1.	
Miscellaneous feasts	20
These are subdivided as follows: abundance of some particular food, 9; baby cutting his first tooth, 1; giving of name to infant, 1; recovery from illness, 2; settlement of quarrel, 1; because infant is strong, 1; for possible mates of infant, 1; end of folk-tale telling period, 1; for my departure, 1; for my servant's departure, 1; just sociability, 1.	

At the far end of the village, other minor feasts probably occurred which I did not record or witness. The number of people attending ranged from twenty to five hundred.

PREPARATIONS FOR A FEAST

Preparing for a feast is a communal enterprise. Early in the morning of the feast, or the day before if it is a big one, the women of the hamlet, village, or several villages, depending on the size of the feast, bring their taro to the communal cooking ground or cook house.¹⁰ They and the girls old enough to be of assistance immediately begin the work of scraping and preparing the taro to be baked. Their only implement is a shell called 'sip, with which they scrape the skin from the taro. The scraped taro is then wrapped in leaves. The women are quite ingenious in cooking, and there are a number of ways in which this general method is varied. Shredded coconut may be added, or the taro may be cut in a certain manner, or the inside may be scooped out, etc. The women sit in a group on the ground, working busily and seriously. A few men are off on one side tending to the liga, a pile of hot stones on which the food is to be baked. A fire is made to heat the

⁸ At these circumcision rites malanggons were displayed. So the rites really had a double function—mortuary and circumcision.

⁹ Men ate at this feast, too, but separately from the women.

¹⁰ The principal foods are taro, fish, crabs, pigs, bananas, coconuts, and pawpaws, supplemented by yams, sage, turtle, etc. Taro is the staple article of diet, and its preparation is the main work both of family meals and feasts.

stones, and when these are hot they are leveled and the food put between them. Leaves and sand are then put over it, and the food remains there until it is baked. Men are working in groups of two or three, but not very continuously, wrapping a fish or a pig in leaves preparatory to baking, or bringing in leaves from the bush to wrap around the food. Their work in this connection is never as steady as the women's work. A man may tend to the *liga* and then loll around for a half hour or more, until there is something else to do. Frequently the men will take care of the babies, while the mothers scrape the taro. The main work of cooking falls upon the women; although the men do assist, this does not break into the sexual division of labor.

When the women have finished preparing the taro (for a big feast this takes at least three or four hours), and after it has been placed in the *liga*, the ground on which they have been working is cleaned and they take their ease. Until now they have been working seriously and without stopping, except perhaps to nurse a baby. There has been no talking except for the necessary remarks about the taro. Now they sit in the same place smoking their pipes and chatting. Gossip is exchanged, jokes are told and followed with appreciative laughter, and here and there a woman is engaged in the pastime of searching for lice in a friend's or relative's hair. If a woman of the village has just become pregnant, there will be playful fighting between the women of the opposite moieties. This part of the pregnancy rites occurs whenever there is a group of women present. The men in the meantime are a short distance away, on the beach, in the compound in front of the men's house or some other house, in groups of two or three, smoking and chatting but not in any large group. This period—while the food is baking in the *liga*—is an easy, convivial, feminine communal occasion, as is the eating which follows for the men.

DESCRIPTION OF FEAST

Three or four hours later, when the food has been baked, the men and boys carry it in their hands into the cemetery. For the men the cemetery serves as a banqueting hall and most of the men's ritual feasts are held there.¹¹ Women are never permitted in the cemetery for a feast, or at any other time, except at a burial, and then they leave immediately after the interment.¹²

¹¹ The economic feasts in payment to workers are not always held in the cemetery, and the *malanggon* ones are held in a special structure erected for them. The connection of eating in the cemetery with mortuary beliefs must be considered at another time.

¹² However, I was invited to all the feasts, and the invitations were always accepted.

In the cemetery the food is eaten with traditional etiquette. The men sit on the ground around the sides of the cemetery. At one end is the pile of food and near it the host or hosts. The bundles of food are opened by the host usually, and then it is customary for him to make a speech, explaining the reason for the feast and mentioning those who have contributed food to it. Several young men act as "waiters" and place a banana leaf on the ground in front of each man, or sometimes one leaf for every two or three men. Then the waiters evenly distribute the food on these leaves, each one getting exactly the same number of taro, bananas, etc. A "waiter" takes as many taro as he can hold and puts about three on each leaf and then he takes another lot and distributes them, until they are evenly divided. At a highly ritual feast, which I attended, for the display of malanggons during circumcision rites, ten men acted as waiters, advancing in a line to the pile of food, picking it up in unison, walking to the leaf plates, and then after waiting for a signal from one of the hosts, put the food down at exactly the same moment. The signal was: "Arurini la pŏlly" (Put it on ground).

No one ever begins to eat until all the food has been apportioned. At the feast just mentioned a second signal was given for this. The two hosts walked silently the length of the enclosure in which the feast was being held, each holding a small pig's bone. The guests were silent. Then the hosts threw the bones away and the eating started. At less important and less formal feasts this signal is frequently omitted, but even then no one ever eats before the "waiters" have finished their work of distribution. Then the guests eat, but not the host. It would be considered very bad form for a host to eat at his own feast.

TRADE AFTER THE FEAST

When the men have finished eating, business affairs of varying nature are conducted. If pigs have been eaten at the feast, payment is now made for them. A string of 'sery (shell currency) is held up by the man giving the feast and he says to whom he is paying it and what for. Then the 'sery is handed over to the seller of the pig. Should the occasion be a very big feast at which many pigs were consumed, this payment will usually be made outside the cemetery, where the 'sery can be given to the women owners of the pigs as well as to the men.

Any other payments due are made at this time. Should a man have purchased a dog, he now makes the payment to the former owner. Preparations are also made for future trading arrangements. One feast was held particularly to arrange for the purchase of pigs to be used at malanggon rites ten months later. The people who would sell their pigs for these com-

ing rites were given bundles of baked sago. The chief called out their names and the sago was given to them. This "marked" them as those who would sell pig for the future rites. The names of some women were called, and when the feast was over they came up to the cemetery to get their sago.

GIFT EXCHANGE

The feast is not only the time for payments and arrangements for future trading, but also for gifts. Usually not all the pigs are consumed at the feasts, and large portions, a head or half the body, will be presented to some one present. Sometimes this is a return gift for a present of half a pig which had been made six months ago, or perhaps it is a new gift to a man, who will return it at another feast. The gifts are always made ceremonially, the name of the recipient being called, and then the piece of pig is handed to him by one of the "waiters."

DISCUSSION

At the end of the feast other matters of importance and current interest are discussed. If dance rehearsals are in progress, one man will make a speech exhorting the men to dance well and to practice rigorously. Or the chief may map out plans for a coming big feast, that is, when they will bring in the bananas to be buried in the sand,¹³ when they will fish, what day the women will prepare the taro, etc. Or perhaps, as happened at one feast I attended, the weather was the subject of discussion. The rainy season (time of northwest monsoon) had begun, and for several weeks there had been a deluge of rain. Everyone was disgusted at having to slide about in the wet mud, and much more serious was the threatened danger to the taro crops. After the men had finished eating, the old and rather famous rain magician, Bullagot, made a long speech, encouraging the men and telling them that the excessive amount of rain was due to the magician of a neighboring village, but that he would counteract this by making his own magic to stop the rain. He was followed by other old men, all making speeches of a similar nature, exhorting people not to be downhearted, saying that Bullagot would stop the rain. The younger men listened and were impressed. It was not unlike a Biblical scene where the ancient prophets encouraged the people in a time of famine or other hardship.

Occasionally a concluding speech is made, although this does not happen very frequently. At the feast to make arrangements for buying the pigs for the future malanggon rites, the chief made a concluding speech, during

¹³ Bananas are buried in the sand on the beach about a week previous to a feast. The resulting banana is very soft and squashy.

which he walked up and down singing and talking. He gave once more the reason for the feast, said they had now "marked" all the pigs, and then made a few more remarks about the size of the animals and the number of men present.

Finally, each man makes a rude coconut-leaf basket in which he carries home the remains of his food. But before they leave, the men carefully clean the cemetery and throw all debris into the sea, near which the cemetery is always placed. Not a scrap of food nor any other refuse, such as a leaf "plate," remains, the cemetery being left in the same neat condition that it was in before the feast. This work done, hands are washed in the sea (the sea as a finger bowl is one of its many uses for the native), and then the men drift away singly or in small groups, each carrying his basket with the remains of the food.

RECIPROCITY BETWEEN MOIETIES

This ritual feast, held on all occasions of importance to the individual or to society, is also frequently the time when the principle of reciprocity between both moieties and localities is seen in full play.

At the feminine feasts, such as pregnancy, birth, first menstruation, and marriage, where there is a distribution of food, the women of the Eagle moiety bring taro which is given to the women of the Hawk moiety, and the women of the Hawk moiety likewise bring taro which in turn is given to the women of the Eagle moiety. This exchange is never omitted. The Eagle women bring their taro, prepare it for baking, and then place it in the *liga* themselves. They do not forget just where their bundles have been placed. Removing them from the *liga*, they give them to the women of the Hawk moiety, who do likewise to the women of the Eagle moiety. The taro is of course all exactly the same and prepared in the same fashion, so that one gets exactly what one has given. But it is the ritual exchange between the moieties that is important. At some feasts uncooked taro is exchanged. At the feast, when the men eat, this act of reciprocity does not take place among them: the food is opened up in the cemetery and the taro is distributed regardless of moiety.

RECIPROCITY BETWEEN VILLAGES

It is the uncooked taro that is most often the object of exchange between the women of different villages at intervillage feasts—usually mortuary and *malanggon* ones. Sometimes the exchange does not always take place at the one feast. The women of Lesu may go to a feast at Ambwa, three miles away, and receive much taro. At a later time the women of Ambwa will come to a similar feast at Lesu and receive taro as a return gift.

At other times the exchange may be effected at the same feast. In the same way, men of Libba will eat at a feast at Lesu, and later the Lesu men will eat at a Libba feast. A feast thus provides the occasion when both individuals and groups pay off their obligations.

FEMININE SPEECHES ABOUT HUSBANDS

At the ritual feasts of circumcision, birth, and marriage, another custom is given an opportunity for expression. At these feasts it is customary for the women to make speeches about their husbands, as good or bad food-providers. The food is arranged in two piles, one contributed by the Eagle moiety, and the other by the Hawk. The Eagle women come on the scene together, each brandishing a masculine implement of work—a fishing net, a spade, etc. They circle around the pile of food contributed by the Hawk moiety, each woman in turn holding up a tool and making a speech about her husband. If she carries a net, she talks about his industry in fishing and how he very often brings her fish. Or she may say the opposite,—how lazy he is. Each woman makes her speech, and the “audience,” male and female, listens to it with quiet appreciation. There are grins and chuckles during a speech about a lazy man, while he hangs his head in shame. When the women of one moiety have finished, the other women enter and go through the same procedure. The speeches show very clearly how much the man’s prestige in his family depends upon his ability as a provider of food. These ritual feasts give the women the opportunity of publicly praising or blaming their husbands and they never let it pass by.

DAILY MEALS

Feasts are of course not the only time when natives eat. When they get up at sunrise, they will eat a cold baked taro left over from the day before. But this is not a meal. The man will often munch his taro as he strolls about the beach, while the woman will eat her’s casually as she tidies the house or collects her implements, baskets, etc. to go to the garden. In the middle of the afternoon, when they have returned from the gardens, if hungry, another cold baked taro will be eaten casually. But after the sun has set there is the family meal. The food for this is sometimes prepared by the wife, or wife and daughter together, and at other times the women of the hamlet may cook communally. The baked food is later taken to each individual household. There, in the open compound in front of the house, each family gathers around the fire and partakes of the common meal. Certainly this meal emphasizes the unity of the family and tends to foster those sentiments which hold the family together—just as the feasts keep alive the sentiments binding larger groups.

OTHER CUSTOMS CENTERING ABOUT FOOD

There are various interesting customs which center around food apart from feasts or family meals. These may just be mentioned here as showing the important sociological rôle of food. Betrothal is consummated by the girl preparing some food for the man and their sitting down with the basket of food between them and eating together. In many folk-tales, when we are told that a man and a woman, or a man and two women, sit down and eat together, this expresses the fact that they are married. A woman never eats with her lover.

The remains of food are connected with black magic, and so one is careful never to leave any left-overs about.

Even the ghosts are concerned with food. After a successful fishing expedition a half taro and a small piece of fish is left on the *liga* for the ghosts of dead clan ancestors whose aid has been asked in fishing magic.

The prohibition of certain foods on particular occasions is the essential part of several taboos. The most important of these is the taboo against eating taro for certain relatives of a dead person over a prescribed period of mourning. During pregnancy a woman may not eat a certain fish. This is one with many bones, and it is thought that they would hurt the embryo child. A pregnant woman will be given a half of a baked taro by a woman who has had children. The latter eats the other half, and this act is believed to insure a successful delivery of the infant.

Food is the most frequent form of gift between husband and wife, between mother's brother and his nephew or niece, between brother and sister, and between friends. It is also an invariable mark of hospitality to offer food to a stranger.

SOCIAL FUNCTION

From the preceding description it is obvious that feasts in this society have other functions beside the satisfaction of physical hunger. Sometimes there is more than one feast in a day and the men then eat as a duty rather than because they are hungry. One day there were three feasts in near-by hamlets, and all attended by the same men. Two were connected with death rites, and one was to mark the occasion of an infant's cutting his first tooth. By the time the third feast was reached, the men were not hungry, but all ate.

Even the family meal, which has the very definite physiological function of satisfying hunger, has also the sociological rôle of uniting the various members. In a similar way the sentiments binding the society together are given collective expression at the feasts, although the very strong line of sex

demarcation is observed. The general rule for feasts is that the women cook and the men eat.¹⁴ Now if a communal activity strengthens the cohesion of a group, the division of society into two groups on one occasion emphasizes the solidarity of each group. But since each of the two groups are partaking in the same rite, there is no real loosening of the sentiments which bind the whole society but rather a further integration of it. The same rites thus have a contradictory function, in that at them the society is united and at the same time divided on lines of sex.

SUMMARY

Feasts provide the occasions when the sentiments on which a society depends for its maintenance are given expression. The objects about which these systems of sentiments center are in New Ireland, as we have seen:

1. Important crises in the life history of the individual, such as pregnancy, birth, marriage, death, etc.
2. Trade—payments made for pigs and other things that have been sold.
3. Exchange of gifts between individuals and groups, wherein the important principle of reciprocity functions.
4. The privilege of women to make speeches about their husband's industry.
5. Maintenance of the individual's prestige.

About all of these—trade, gift exchange, reciprocity between moieties, crises in an individual's life, economic relationship between a man and his wife, prestige—systems of emotional tendencies are organized, and it is necessary according to the theory described in the beginning of the paper, for these systems to be maintained, strengthened, and transmitted from one generation to another. Feasts are a form of ritual which thus have the social function of impressing upon the individual the sentiments of his society.

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¹⁴ At seventy-five of the eighty-five feasts I attended, only the men ate.

THE following information was secured during the winter of 1929 from Agnes Mattz, a full-blood Tolowa woman of forty-five, who came from Smith river, north of Requa in California. She was in domestic service in Oakland, California, at the time.

GIRLS' PUBERTY CEREMONY

The first ceremony lasted ten days, but the elaborate dancing and singing festivities described later were reserved only for the daughters of prominent families.

Ordinary procedure.—The girl was placed under a tule mat within the common dwelling-house. The mat was stretched diagonally from the wall to the floor, forming thereby a shelter or retreat. Under this tule mat others were spread out as a bed. Here the girl remained all day without sleeping. She was permitted to sleep at night but was forced to rise each morning before dawn to bathe. She went to the river with head and body covered by a tule mat. Were she to see the sun she would suffer from weak eyes in later life. For the first three or four days she must fast completely on both food and water. When she ate once more, it was from special containers. Her mother or any other woman who knew the formulae came to pray over her. The informant gave the formula repeated for her on this occasion to the best of her memory:

This young girl, give her food forever, Old Man. May she always eat this food. You are over us, looking at us, every step we make. She is going to eat her food, something which will never make her sick. And you will give her water to drink. And all kinds of berries you will give her. Some berries have worms in them but that will never make her sick. You know that if I did not pray for her and for all her food, she would not live long. You are over us, Old Man, and you wanted to give us all these things when you sent us all to this world, so you must guide this girl.

After a formula had been repeated and the fast broken the girl might eat morning and night only, and she must eat alone. When she broke her fast it was usually on dried smelts, acorns, and blackberries. At this time also a pinch of incense made of wild roots (unidentified) had been placed on a fire made especially for this purpose under the tule shelter. No particular observances were initiated after the breaking of the fast and before the ninth night. At this time the girl's body was rubbed with red clay. On the following morning she bathed and removed the clay.

More elaborate procedure.—The more elaborate ceremony was held for the daughters of wealthy persons. When still children they were pointed

out with the comment, "We are going to 'medicine' her when she gets old enough." The better the care and the greater the ceremony at puberty, the larger the bride price which might be expected later. If a girl were not given an adequate ceremony, it was felt that she would die young. What differentiated the elaborate puberty ceremony from the ordinary one was the dancing and singing which took place nightly and the accompanying feasting. The dancing was done chiefly by the boys and girls. No married or divorced woman was permitted to join. The girls must have passed puberty. No information concerning the boys was obtainable. It is uncertain whether dancing took place in the girl's house or in the village dance house. In any case the girl was present but in concealment under tule mats. On the first night only a few dancers and singers attended the girl. The numbers increased until finally on the ninth night the climax was reached. The dancers were told to sleep in the early evening. They were then awakened and told to bathe. After bathing, the girls put on their best clothing which consisted of a deerskin apron and cape, beads, bracelets, anklets, etc.; they were painted with red and black pigment. Untattooed girls had their chins decorated with three stripes of finely powdered charcoal mixed with deer fat to imitate real tattooing. The hair was twisted into two strands with strips of fur, and a strand hung over each shoulder. Two feathers were inserted into the base of the strands at the back of the head, and a basket hat was then worn. The boys also wore their best clothing, which consisted of a fur apron from the waist to the knees, woodpecker head-bands, etc. First the men, ranged as to height, entered the house dancing. The girls, similarly ranged, followed and danced to alternate places between the boys. They formed a semi-circle. The musicians were seated in two corners of the house back of the dancers. The informant recalled that six different songs and dances were performed in connection with the puberty ceremony. However, the songs were sung at any time and no particular feeling of sacredness seemed attached to them. Between dances dried fish and acorn soup ("which makes you sing good") were furnished the performers. They were at liberty to rest, even to go home for a time. Also between dances prayers were said for the girl that "she might have a long life and have everything nice."

At dawn the dancers descended to the river whirling as they went and stripping off their clothes on the way. They were followed by the rest of the villagers, who recovered their clothing for them. It was considered very bad luck to make a misstep or fall in the descent to the river: this would shorten one's life. On this tenth morning a man, whose status was not obtainable, took the adolescent girl out from her tule shelter. She was dressed in a very full skirt of shredded tule, and a mat of the same material was

wrapped around her. She should also wear a cap of yellowhammer feathers, which would almost entirely conceal the face. She was led out and placed beside the fire. The man who officiated sang and shook her back and forth five times. The tule clothing was then removed and replaced with her ordinary dress. A child of six or eight who had been standing near her then preceded her in running down to the river. The girl jumped in, bathed, and returned to the fire. This was done ten times. She was then considered "all clean" and was "free." After this final observance which terminated in the middle of the morning there was a big feast. The father did not bear the burden of it alone. Various families charged themselves with the guests. Friends of the father helped in supplying food and wood throughout the ceremony. The fire for dances must be built of wood which did not crackle in burning.

The preceding ceremony, both in the simple and the elaborate form, was repeated for the three successive menstrual periods, i.e., there were four ceremonies all together. Then a girl was considered a woman and ready to marry. Associated with the four repetitions of the ceremony were two methods of keeping count. A yellowhammer feather with four black bars on it was passed through the pierced septum of the girl's nose at the time of the first ceremony. At the second repetition a feather with three bars was used, and so on until the last performance, when one bar was used. The second method of keeping count was to hang around the girl's neck a small circular basket in which four basketry disks were laid. One disk was removed after each ceremony.

Throughout the cycle of ceremonies a number of observances were rigidly held by the girl. She used an abalone shell head-scratcher; to use her own fingers would produce baldness. She ate apart and from her own dishes, which no one else might touch. She bathed after each meal, that is, twice a day. She wore a distinguishing face marking which consisted of two diagonal lines on either side of the bridge of the nose and one diagonal line on each cheek-bone. They were painted on in charcoal mixed with deer fat. These practices, in addition to seclusion, marked the girl off from the rest of the inhabitants of the village during the four months of puberty observances. Girls were frightened into taking meticulous care of themselves by being told that otherwise they would develop ill health later in life, and more particularly that they would have their flesh destroyed by worms. The informant stressed the tediousness of the personal care involved during this period, but seemed to feel that a compensating distinction resulted therefrom. She further commented on the strangeness of such a distinction accruing to girls at this time when boys had no parallel ceremonies of equal importance; yet men on the whole, she felt, were more important than women.

The septum of the nose was pierced before puberty. The informant reported that her mother called in an old woman to do it to her "so that I would be ready when I got sick the first time." The septum was rubbed and worked between the thumb and forefinger with warm water in order to soften it. Then a smooth redwood needle was thrust through the dividing cartilage.

Ear-piercing was done after puberty and seems to have had no significance other than making possible the wearing of earrings which "make you look pretty at a dance."

Tattooing also occurred after puberty and seems to have had no connection with it. It was purely decorative. The informant had only a small spot on the inside of her forearm which her sister had made in play. She reported, however, that her mother had three stripes on the chin running from the lower lip, one dot above each corner of the upper, and a band on the wrists and ankles. Tattooing was done in the usual fashion. The flesh was lacerated with a splinter of obsidian, and a paste made of water and charcoal (gathered from the earth lodge) was rubbed into the wounds. The operation often caused such painful swelling that eating was practically impossible for several days. Men tattooed only the ankles and wrists. This was optional. Dentalium measurements were marked on their forearms.

The hair after puberty was cut in bangs on the forehead. Also strips reaching a little below the ears were cut. When a woman was married the hair was permitted to grow again.

BOYS' EDUCATION

Boys of eleven or twelve, who were still "clean," were taken deer-hunting for the first time. Thereafter they received careful instruction in the care and safe-keeping of bows and arrows. The first time a boy brought food for the household was considered lucky. A woman of the family made him a new shredded tule apron for the occasion. The first time he speared a fish the same thing was repeated. But after this no notice was taken.

As in many Californian tribes, to be brought up by a grandmother was a great asset. As the informant expressed it, "If a boy is brought up by his grandma and believes everything she says, he gets to have good sense, he knows everything, he talks the same way to all kinds of people no matter what kind of clothes they wear." This last statement was an interesting commentary on the democracy of manners among the Tolowa despite emphasis on wealth.

NAMING

There were both real names and nicknames. Real names were used more than the latter. They were given at any age, and a person might have more

than one. Name-bestowing entailed festivities. Everyone assembled, then the person who was to confer the name entered and pointing at the one to be named said, "What? Is So-and-so here? I see him sitting here." At this everyone laughed heartily. Then the guests were feasted.

There existed also the name taboo for deceased persons. Breaking it was atoned for with a money payment. Not only the immediate family but also collateral relatives were entitled to consideration in this respect and could demand indemnification.

MARRIAGE

Bride purchase existed but with the usual compensatory gifts from the girl's family. A bride was usually chosen by the man's parents. The two young people might never have seen each other. This careful control of marriage applied particularly to rich families. The bride went to the groom's home or the groom and his family went to the bride's. She appeared richly dressed with many strings of shells around her neck. Divesting herself of her rich clothing and ornaments, she presented them to the mother-in-law. If a bride failed to make this gift, she and her children were looked down upon. The informant felt that the bride's gifts might be large but rarely equaled even half of the bride price. One hundred dollars was a very large payment for a bride.

The bride price was not returned even though the woman died childless. If a man died leaving a woman childless it was felt to be a great tragedy. If a couple separated, the husband was entitled to ask for the return of the bride price. The woman's father usually demurred, especially if there were offspring. He refused on the grounds that "it would be as though his grandchildren had come out of the ground," i.e., it would reduce the children to the status of bastards. Sometimes in such cases part of the bride price was returned but seldom all of it.

After the exchange of bride price and gifts, the couple might reside either patrilocally or matrilocally, but the ideal situation was to establish a household of their own. Households therefore roughly consisted of the biologic family. The house in which the informant was brought up contained her mother, father, sister, her sister's husband, and their five children, i.e., it sheltered ten persons. The informant felt this group to be somewhat larger than that in the average household.

Theoretically, bastards were not tolerated. According to the informant the child was thrown in the river. "We don't want that kind of child in our place."

ESCHATOLOGY

The burial customs are given approximately in the words of the informant.

Indians are afraid of the dead. They must not be taken out of the regular door. That is the way the living go out. The dead have gone to a different country and they must travel a different road. The boards of the old houses weren't nailed. The walls were just boards stuck in the ground. So they took out a couple of boards. After the body was wrapped in tule mats they carried it out through the opening. It was carried to the graveyard. There the body was washed. It could not be washed in the house because it might leave uncleanness there. One person, a man or a woman, went to the river to get the water to wash the body with. He was followed to the river and back by a young person. Beads and money shells were put on the body. If it was a woman, she was dressed in her deerskin dress. Her hair was left unwrapped and hanging over her shoulders. Shells and baskets were piled on the grave when it was being filled. Then everyone went to the river to bathe.

When a woman's husband dies she shaves her hair. If she remarries or has a lover she lets it grow. If her hair is kept short it shows she is a good woman and hasn't known a man after her husband's death.

The bereaved burn the property of the dead in order that they may not suffer reminders of their loss. Burning took place at the time of burial. Theoretically, all valuables should be destroyed, even boats and paddles. This produced such a conflict with Tolowa emphasis on wealth that actually valuables were often purified instead and then used by relatives. The article was washed with a paste made from a root whose name was unknown to the informant. Pepperwood leaves (bay?) and salal berry leaves are also purifying agents. Objects were rubbed with them and laid aside for a month or two. Today houses are still purified after illness or death by burning salal berry leaves and pepperwood leaves, filling the house with their smoke and then brushing everything off with the same kind of leaves. This also prevents illness.

"Almost all dances make people feel badly because the people who died aren't there to enjoy them." Certain clothes were kept for dances and worn commemoratively. When a wealthy man or woman died he might say, "Don't bury these clothes, but take them out and wear them when you have a party."

POSITION OF WOMEN AND DIVISION OF LABOR

A premium was placed on a woman's capacity for work. When a man thought of buying a wife he looked to see if her hands were rough and scratched. If they were, he was convinced of her industry. Women were

required to carry out all the food-gathering activities connected with acorns, greens, seeds, etc. She was responsible for making tule mats, weaving baskets, etc. Twice a day she went for water. Women dried fish. One of their most arduous tasks was collecting wood. This might entail crossing the river in canoes to a spot where the firewood had not been exhausted. The canoe was filled and returned to the settlement. The wood was then placed in baskets and carried with the aid of a tump-line to the houses. Fires were kept burning constantly, and keeping them supplied with fuel was heavy work. If a fire went out, new fire was borrowed from a neighbor. The informant with an air of grievance said that men lay in the sweat-house all day while women worked very hard. Actually, however, the men shared in economic support by fishing, sea lion and deer hunting, canoe making, etc.

Furthermore women treated men with much respect. The informant made the statement in the following manner.

No girl must ever walk in front of a man or boy. It is awful. If you walked in front of them people would say you weren't brought up right. Parents had to tell girls all these things, especially how you have to act about men.

Women must have meals prepared when men returned home. They must be quiet while men ate and only after the men were through might the women eat. In the presence of men they sat decorously with their knees folded to one side under them. Men often used low wooden stools but women did not.

Girls were reported to have played in the sweat-house during the absence of men, and women were allowed to enter it to witness the women's shamanistic dance. But as a rule women avoided it. The men were accustomed to sleep there. The practice was to shut all openings and strip off clothing before going to sleep. A "sweat" was made every morning and evening and the heat lasted twelve hours.

SOCIAL RANKS

Chieftainship was hereditary in wealthy families. A chief was an individual of outstanding wealth. "He didn't hunt or fish like the rest; he was so rich he didn't have to. Sometimes he was so rich that he had ten wives. All his sons were looked up to because they came of a good family. One of the sons would become the headman but there was no way of telling which would be chosen."

Sometimes the chief adopted or bought poor boys to work for him. They had to get food, carry wood for the sweat-house, and perform other similar tasks. The boys so adopted or bought were sons of poor people. "Poor people can't say anything. They haven't got money to talk with. They haven't

anything to say. They are like slaves." When an adopted boy is old enough, his owner might buy him a wife and release him to make his own living. The informant in discussing this matter of adoption seemed to feel that she was dealing with a form of slavery but of slavery to which no particular onus other than poverty was attached.

Individuals who had been lazy or inefficient in gathering food during the spring and summer were forced to buy it in winter. If they were too poor to pay for it they were given food by others but they were looked down upon. "Anybody could do what he liked with them."

WEALTH AND PROPERTY

Among the Tolowa real property could belong to individuals. Rich men owned portions of the river bank where no one but themselves might fish, unless of course the owner rented the fishing right. The same type of ownership extended to deer hunting grounds. The tribe moved in the winter to the mountains to hunt deer and in the summer to the beach to gather sea foods. The beach was not marked off into privately owned strips but belonged to the tribe as a whole. When a whale was washed ashore it also was considered common property and was divided by the headman. He was entitled to reserve the best portions for himself, including the flippers which were considered a great delicacy.

Other forms of wealth were dentalia and obsidian blades. Dentalia were strung according to size and kept in elkhorn boxes. The shells were fragile and highly prized. Therefore they were handled slowly and with reverence. Men tattooed marks on their fore and upper arms by which to measure the length of their strings. The possession of a string the length of a man's arm was a sign of wealth.

Obsidian blades were black or red and varied in size from the length of a man's hand to that of his arm.

The social implications of wealth and its desirability were expressed by the informant in approximately the following words:

A rich man was born rich and was a headman in the village. He owned much shell money and many obsidian knives. He had special fishing spots and land for hunting deer. If a poor man wanted to be rich he had to do a lot of sad things. He would go to a lucky mountain and cry and wish hard to be rich. He would think of his father and mother and how poor they were. He just sat and cried and thought hard about beads and rich things like that. For ten nights he would keep watch over a small fire of fir limbs. It is lucky to find a little basin of water on the mountain at this time. At dawn he would come back to the village crying. It was awfully sad to hear him. Then he would go to the sweat-house where the men were still sleeping and build a

fire from fir limbs which he had brought down in a bundle from the mountain. After he was through sweating he would go to the river to swim. Sometimes people go crazy wishing so hard to be rich.

SHAMANISM

Shamans were generally women, although men might occasionally acquire the rank. The attitude of the informant toward male shamans was that "they are not much doctor, they know only a little bit." The following account was either a real or a hypothetical case related by the informant.

There was a young woman who must have been poor because she felt sorry for herself. One day she was eating dried fish eggs and a woman took them away from her because they were too good for such a poor person. The girl felt sorry for herself and kept thinking all the time about the fish eggs. "Some day I hope I have everything I want," she said. She used to cry all the time. When she went to sleep she dreamed she would be a doctor and medicine people and money would come to her.¹ She talked about it in her sleep and walked about. People began to notice her. They asked if she were going crazy. She said she couldn't help it. Old Man gave her everything she wanted in her dreams. She got worse and worse. Maybe she would grab fire and eat it in her sleep. She could step in fire and not get burned. Sometimes she would climb up through the smokehole when she danced in the sweat-house and men would have to hold her. Then the people would say, "Let's take care of her. She is going to be a doctor." For maybe one year she has to eat alone, she has to eat special things, she has her own plate and cup which no one else must touch, she must be clean and take care of herself, get up early in the morning and not have anything to do with men. If she didn't do these things she would be like common people. Then she is taken to a lucky mountain where she dances facing the east. While she is there one or two older women stay with her all the time and hold her up when she dances if she gets too weak. During this time she eats just a little food and may drink water only at certain times. The fire is made of fir limbs and nice smelling roots are burned in it. She has to dance over this fire. The men sit around and sing, usually about the lucky mountain.

Sometime during the period of initiation the woman danced for ten consecutive nights in the sweat-house and was then taken to the lucky mountain where she danced ten more nights. Should a candidate be incapable of sustaining the rigors of the dancing and fasting, her powers are never considered complete although she may be able to achieve certain types of cures. Thereafter she doctors to the best of her spirit's abilities and should she effect a cure she is generously paid.

¹ The close connection between shamanism and wealth for women, and vigils and wealth for men is here evident. The possibility for adjustment to the social emphasis on wealth open to both sexes is of interest.

The curing procedure used by a shaman who has not entirely mastered supernatural powers is the following: She places water in a basket and in the water a fragrant medical root. Then she says, "good words, that the person is going to get well, be on clean ground, that her spirit has told her to doctor in this way." Everything which she speaks is "holy and goes all over the sick man's body to make him well." She then sucks the medical root, blows on the person and assures him that he is well. The curative element in this form of doctoring is the words spoken by the shaman.

The method of treatment used by a powerful shaman and the one considered the more effective was described by the informant in this general manner.

When a doctor is called to treat a sick person, she is offered a certain sum of money. Maybe the doctor won't think it enough, so she will ask for more or even refuse to doctor at all. A pain is something sticking in a person so the doctor must suck it out. She says words which come to her in her dreams. She dances facing east. She closes her eyes and says she can see things. Then she turns to the sick person and says he wished evil to someone and now his badness is lodged in him. If the sick man confesses having had such thoughts maybe she can help him. The sick person tells what he has been thinking. Then the doctor says she will take out the pain. She spits on the sore spot and begins to suck. Finally she sucks it out and shows a small black thing in her hand all mixed up with her saliva. Sometimes it looks like a small turtle or a small snake. It has two eyes. Then she stands up and dances and sings. She blows on her hands maybe six times and blows the pain away. Her hands are empty but no one has seen the pain go. The doctor closes her eyes and says she can see which way the pain went. Sometimes it goes back into dangerous ground (i.e., quicksand).

If a shaman loses a patient she may be required to return the fee. If the family feels that her efforts were sincere they will ask for only half of the fee to be returned. Good doctors were always persons of wealth and therefore of importance in the community.

POISONING

Poisons were made of frogs and lizards. They were dried, powdered, and put in food. The victim's stomach would swell and the person die. The spittle of a dying person was considered particularly poisonous and deadly. It might be kept in a small basket until the poisoner wished to use it. Also poisoners had "something, maybe it looks like a little newborn bird." They talked to this charm all day, maligning the victim who would then die from the evil spoken against him. Sometimes a poisoner walked around his victim's house at night pointing his charm at the house. He might make small sounds resembling those of a mouse, bird, or dog. The people in the house

might hear the noise but they would be afraid to go out. The fear of poisoners is very great. No one would betray a suspected person for fear of being poisoned himself. Not only were poisoners within the tribe regarded with horror but the people living at Requa (Yurok territory) were generally held in distrust in this respect.

A case of poisoning by a thwarted lover was reported. The girl had rejected a suitor and married another man. The rejected suitor then secured a hair from the girl's head, placed it in the mouth of the snake and told it to kill the girl. The snake went to bad ground (i.e. quicksand). The girl began having severe headaches. A shaman was called in and he revealed that someone was working against her. Thereupon the rejected suitor was summoned to her presence by her family. He confessed to what he had done and said that he hoped she would recover. This was all that was necessary to undo the charm and thereafter the girl was well.

PRAYER

Prayers were formulae which had to be known word-perfectly. They were resorted to in times of danger, when a storm arose at sea, when one was lost in the mountains, or at any time when one feared for one's life. At such times the formulae were petitions to the spirits inhabiting either the ocean or mountains. In the words of the informant:

most of the men seem to know these prayers. When a storm comes up some one says, "Don't any of you men know a prayer?" Then someone who knows it, says it. That's how you learn them. It is the same in the mountains. When you get lost there all sorts of things follow you; there are mean things in the mountains. Ocean and mountains are the same. It is best to be on land.

In this connection the use of the term Old Man in petitions quoted throughout this paper may be noted. The informant compared him to the white man's God. The Tolowa would seem to share with many other Californians a belief in a supreme being.

CEREMONIES AND DANCES

The informant felt that many ceremonies and dances were definitely comparable to what is considered religion in the Euro-American culture. "When they have the feather dance, or dances for girls and doctors, it seems as though they are the times when they talk like religion."

First salmon ceremony.—The salmon run in Smith river during the late summer. A certain old man is sent to catch the first fish. After being caught it is cooked and the village assembles in the early morning to eat it. Then a particular man repeats a formula for the salmon to the effect: "May we

all be here every year to eat fish." The person who pronounces the formula was described as "a man who knew about these things" and was compared to "preachers" among the whites. After the pronouncement everyone partakes of a small morsel of the fish. No dancing is connected with the ceremony. All of last year's fish must be thrown in the river. The dried fish of last season must not be eaten after the new run begins. After the ceremony all are free to fish, even the women.

Feather dance.—It was performed during the winter in the dance house. It lasted five nights. The costumes consisted of the best buckskin clothing and ornaments which the dancers owned. Boys and girls performed while the older people, who were singers, stood in the northern and southern corners of the house. A pitch wood fire was used to furnish both light and heat. The young people danced in a line. From it one or two girls might step forward and dance back and forth on the tips of their toes. Three or four boys then stepped out of line also and a mock pursuit ensued in which the boys brandished knives and seemed to threaten the girl or girls. If two girls performed at a time they moved back and forth in front of the line in opposite directions. Another special feature often used in this performance was danced by a man wearing a deerhead decoy. He imitated the behavior of a deer who feared danger by running a few steps, stopping to listen, and running again. After a special feature of this sort the audience expressed its approbation by wishing the dancers riches and good fortune. "We wish that you may have another dress like the one you wear. We wish that when you marry you will be bought with two rows of dentalia." "We wish that you may get another knife like the one you have. We wish that you may have some day more beads like the ones you now have. We wish that you may go up in the mountains some day and get a fine woodpecker. We wish that a big seal might come ashore for us to eat." To such expressions of good will, the dancers replied with, "Yes, we wish that we might have more."

The dancing continues until morning. As day breaks, everyone goes to bathe. The women then return to the houses to prepare food. It was customary for one village to invite another to the Feather dance and for the guests to be fed at various houses. The men slept in the sweat-house and the women at the hosts' homes. The informant dubiously suggested that there might have been a special house for the guests to occupy.

The informant knew of the Requa (Yurok) Brush dance.² She said that it was performed for sick children, that it lasted two nights, and that men of all ages and unmarried women beyond puberty participated in it.

² For description, see A. L. Kroeber, *Handbook of the Indians of California*, BAE-B 73: 61-62, 1925.

The song types known to the informant were shamans', feather dance, and love songs.

HAND GAME

The hand game described by the informant is that played with a bundle of slender rods, and one marked stick usually called the ace. From her description it seemed typical of the game as it is known in northwest California. There were, however, certain associated traits and beliefs which are of interest. Each side has a white deerskin mat spread out before it and after a guess has been made the bundle of sticks is allowed to drop, a few at a time, upon the deerskin to reveal whether or not the ace is in the hand chosen. The game is played to the accompaniment of a deerskin-covered drum and to singing by the side holding the sticks. Games continued all night and were often played from two to four nights in succession. It was played indoors and a fire built on white sand furnished light and heat.

The participants were usually boys who had not known women because they were considered particularly lucky. The leader of each team however was a rich man of the village who directed the game and placed the largest stakes. Fifty to one hundred dollars might be lost by an individual in a night's play. The boys who actually manipulate the rods purified themselves before participating in the game by a vigil without sleep or water for five consecutive nights. They also have certain food taboos to observe, possibly on deer meat. Cold water must not be drunk, for that "cools one off" and "kills everything." A woman who has recently born a child must not be eaten with for she is considered unclean. During the actual gambling no woman is permitted to enter the house, although she may look in from outside.

MISCELLANEOUS BELIEFS

As is usual in California there was a belief in a first people who were animal characters. The earth burned up and they went. When white men first came they inspired the belief that the first people were coming back. They thought that they would return over the water. Therefore they said, "Let's not look at it (the water). It is bad luck." The informant also said that the Tolowa at this time believed that the Indian dead would return. She was possibly confusing the beliefs concerning the first appearance of the whites with beliefs of the later Messianic cults, reverberations of which may have reached them. The first flour introduced by the whites was believed to have been made of ground human bones and was believed to be poisonous.

TALES

The telling of myths had no religious or ceremonial significance. There were no tales belonging exclusively to women or told exclusively to and by them.

Tidal Wave

This happened in Oregon. There were no white people on earth when it happened. Chetko is where it happened. It is called Brookings now. Chetko or Chet is the Indian name. It is a very pretty place on the bank of the river. There are nice even fields along the river all the way down to the ocean. The rich lived near the water. The houses were so thick there were only little trails between them.

One evening everyone was playing, all the little boys and girls, all the young women and young men. A widow woman mustn't "cut up" or laugh. A widow woman with her hair cut short like a man came and joined the young people in their play. She began "cutting up" and laughing as loudly as she could. It was getting late that evening.

There was an old woman who was blind, she was so old. She had brought up her grandchildren, one boy and one girl. The boy was just old enough to fish for smelts. She always had things ready for them when they came in. She had a hard time bringing them up because she was so old and blind. She said, "I brought you up nicely. I had a hard time doing it."

The widow began to laugh as loudly as she could. The two children said to one another, "Grandmother said when a widow acts so, something would happen." The dogs jumped around. They were glad. Dog sat up and said, "Yes, you folks are going to see tonight what will happen to you, tonight." The two children ran in the house and told their grandmother, "Dog spoke," and they told her what dog said. The grandmother told the children to go right away, to go as fast as they could and not to wait for anybody. She would stay. She was too old and was ready to die anyway. She told the boy to take his fish net and his money. So the boy took the fish net and the money and the two children ran as fast as they could, upstream, away from the harbor toward Mount Emilie as their grandmother had told them.

Halfway there they looked back. They could hear the people cry. They could hear the cries rise and sink out. They could see the water come. When they reached the top of the mountain all the things in the woods which have names were there, deer, rattlesnake, panther, everything. The boy made a fire and they all sat around it. All night they sat around the fire on top of the mountain. When the sun came up it (water) had all gone away. The brother and sister stood up. Everything was gone. They went back to where their house had been. There wasn't anything there, no dead people. Everything was swept away clean. The ocean was nice and smooth. Everything was pretty. There was no wood to build a fire. The boy went down to the beach to fish. He saw far away someone slowly coming toward him. It was a girl. He went to meet her. They got married and people started again.

Pigeon

Before people were on earth, before the Indian was here, pigeons were a people, so were the cranes and the otters. They said, "Let's play cards." They all came together in a village, all came from different nations. The people were thick in the house so that there was no place to sit down. Young man (Pigeon) was playing cards. Everyone stood around with feathers and beads on. The drum was playing and people were singing. Pigeon was raised by his grandmother. He was raised very nice. On his side people were singing. They were singing so loud you could hear them far away. Some one came in very slowly, went to the fire and said, "Do you know what happened?" Pigeon didn't pay any attention to him. "Your grandmother died," he said. Pigeon said, "Never mind if my grandmother died. Go on." he said. "I shall remember her in the spring," he said. "I shall cry for her every spring," he said. He just kept on playing cards. He never went to see his grandmother. So that is why Pigeon still cries like this every spring. (Informant thereupon imitated the cooing of the mourning-dove.)

UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

A UINTAH UTE BEAR DANCE,
MARCH, 1931

By JULIAN H. STEWARD

INTRODUCTION

TWO annual dances are still performed by the Uintah Ute: the summer Sun Dance, derived from the Plains area, to which they are marginal; and the spring Bear Dance, which is peculiar to the Great Basin tribes and a few peripheral groups.¹ Although the Bear Dance has been described at various times, unfortunately no complete analysis of it was undertaken before its forms and functions were modified by Caucasian influence. Lowie, who did not have an opportunity to witness the Uintah Ute dance, has compiled a fairly complete description of it drawn from older published records and Indian informants.² Reagan has briefly described the more ostensible features of the Ouray Ute (Uncompahgre) dance of 1929.³ Spier's study⁴ provides a good comparative and distributional survey.

The Bear Dance no longer retains many of its older elements, for deculturation and restrictions imposed upon the dance by the Indian administration have altered both its purpose and nature. It remains, however, a matter of vital interest to every Ute and provides for the ethnologist materials for a study of culture change.

The writer was granted leave of absence from the University of Utah during the early spring of 1931 to observe the full week's program of the Bear Dance performed by the Uintah Ute at Whiterocks, Utah, between March 22 and March 30. The greater part of the dance was personally observed and where it seemed to have departed from its earlier pattern, an effort was made to secure descriptions of the latter from informants.

PURPOSE AND MEANING

The Bear Dance was in the past a spring festival that preceded the breaking of winter camps and migrations in search of food and game. Before the advent of the white man, small bands of Ute, probably numbering fifty to one hundred, took up winter quarters in skin or brush tipis in the coniferous forests of the foothills along the southern slope of the Uintah mountains. Early in spring, probably about February, came the dance as a signal to break camp and move about in the pursuit of game. Each small village was apparently a law unto itself for this official introduction of the new

¹ Leslie Spier, *Havasupai Ethnography*, AMNH-AP 29: 267-274, 1928.

² Robert H. Lowie, *Dances and Societies of the Plains Shoshoni*, AMNH-AP 11: 823-831.

³ Albert B. Reagan, *The Bear Dance of the Ouray Utes*, *The Wisconsin Archaeologist*, n.s., vol. 9: 148-150, 1930.

⁴ Spier, *op. cit.*

season seems to have been held by each without reference to the others. News of an approaching Bear Dance was, however, carried to other groups so that visitors might come to participate. Extremely small villages contented themselves with their neighbors' ceremony instead of attempting it at home. An occasion of organized sociability unattainable at other times of the year was thus provided for intervillage visits.

The Bear Dance is still dated by a seasonal change in activity, but spring now means the beginning of agrarian pursuits instead of migrations for food. This, however, merely permits the dance to come later, in March, just prior to breaking the soil and after warm weather has set in. Owing to concentration of the Ute population upon reservations, the dance is held at only the following three localities in the Uintah basin: Whiterocks, by the native Uintah Ute and White River Ute from western Colorado; Ouray reservation on the Green river by the Uncompahgre Ute from near Montrose, Colorado; and Myton, as a commercial enterprise, mainly by non-reservation Uintah Ute. The early tendency for scattered bands to organize temporarily into an approach at communal activity has reached the extreme, through reservation concentration at Whiterocks and Ouray. Not only do the reservation residents attend, but many families travel a score or more miles. The attendance of those living at a distance is not a function of modern transportation, for few Ute can afford even the luxury of a worn-out Ford. During the early stages of the dance the roads for miles are dotted with horsemen or wagons heaped with hay, baggage, and people.

The Indians now desire two successive dances: one at Whiterocks followed by one at Ouray, or vice-versa, so that the residents in one locality may participate in the other's dance. Reservation policy frowns upon this, however, for it takes two weeks instead of one from useful activity and may, moreover, lead to quarrels among visitors. Consequently, the two dances were simultaneous this year. At the town of Myton, however, which is in the center of white population, the usual commercial dance was staged by non-reservation Indians at the completion of the other performances.

The management of the dance is today as in aboriginal times in the charge of one man, chosen specially for the occasion. Until his recent death, Kwainats was both tribal and dance chief. He was succeeded, however, by John Duncan as tribal chief, while Billy Chapoose (Chüpüs) became, for this year at least, dance chief. The Bear Dance chief is definitely chosen by the men of the tribe, whereas the tribal chief attains his position through age and prestige rather than through election.

The purpose of the dance and the attitude of the participants toward it have probably altered more than its external, formal features. For at one

time it had definite supernatural reference to the bear and even included other minor religious elements, whereas today it is almost purely a social affair.

Accounts secured regarding its former significance are substantially in agreement with those already published.⁵ Supernaturally, it was to conciliate the bear, for by doing "his dance" his friendship and kindliness toward human beings were secured. There seems to be little question in the minds of even the younger generation that the bear dances in the mountains as the people do in the Bear Dance. The following origin account, in which the Plains formula of vision-given ritual is suggested, was secured from John Duncan:

Long ago a man dreamed he saw a bear way back in the mountains dancing in front of his house. He danced to a pole and back again and kept repeating this, as the people dance forward and backward now. The man then set out to seek the bear. After traveling in the mountains, he found him dancing in this manner. The bear taught his dance to the man, who returned home and introduced it to his people.

Thus a feeling of rapport with the bear is supposed to be established in order that hunters and people traveling in the mountains will not be molested by him. Paradoxically, this does not call for any taboo on bear hunting. It is a matter of doubt whether this connection with the bear originated with the dance, for these people lack bear shamanism. Moreover, the name of the dance, *mama'qündküp*, refers not at all to the bear but to the "backward and forward steps of the dance."

In addition to propitiating the bear, the dance also provided an opportunity, according to Jeddie Long Hair, for a few prayers, probably to *Sü'nāvi* (Wolf) and some doctoring.

The changes in the Indian's attitude toward the Bear Dance involve emphasis rather than innovations, for the ceremonial aspect is practically gone, whereas the social appeal is increasing. The most feared species, the grizzly, has disappeared and the brown or black bear is virtually extinct, tribal religion is on the wane, and the medicine-man is losing prestige. Since the religious motivation is lacking and even the climax of the whole affair, the appearance or "coming out" of the bear on the last day of the dance is regarded as unessential, the dance is now considered an occasion for "good times," relations between the sexes being of paramount interest.

The duration of the dance this year was originally set for one week, Sunday to Sunday, but inclement weather delayed it so that an extra day was added at the end. As John Duncan could not recall its ever having a

⁵ Lowie, *op. cit.*

fixed duration, stating that about one week was usual, it is evident that no ceremonial number of days is involved.

PARAPHERNALIA

The dance enclosures and paraphernalia observed were the same at Ouray and Whiterocks. The circular corral was approximately one hundred and ten feet in diameter at Ouray and one hundred feet at Whiterocks. At each locality the enclosing fence was between six and seven feet high, constructed of pairs of poles, a few inches apart, set at intervals of several feet between which were laid brush and boughs to the desired height. (See pl. 6*a*.) At Ouray, limbs of cottonwood, which is very abundant, were used; at Whiterocks, birch and service berry were employed. John Duncan declared that formerly they merely piled boughs on the ground and the elaborate fence of today is to protect the children from horses. This seems questionable, however. The opening in the corral, which was approximately five feet wide, was due east at Ouray but at Whiterocks was directly south. Although an informant at Whiterocks stated that the tipi door was oriented east, he did not seem to comprehend that the dance corral should be similar. One person stated that the opening was south because the prevailing wind was east—a poor rationalization.

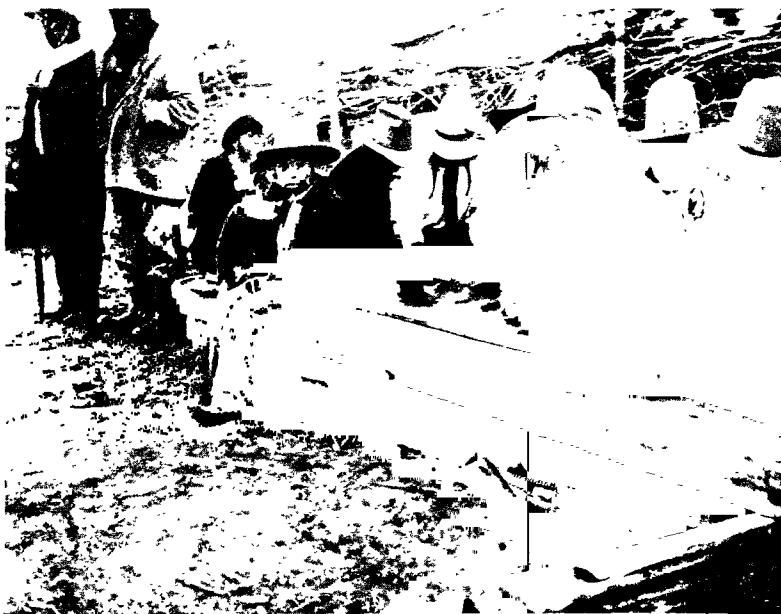
A new corral is constructed each year at Whiterocks. Just north of the present dance grounds were observed the charred remains of last year's enclosure, while to the northwest were the remains of one of an earlier year. The reason for burning the old corral and choosing a new site each year was not ascertained.

At both Ouray and Whiterocks the orchestra was stationed against the fence, directly opposite the door. (See pls. 5 and 6*a*.) A wooden frame about one foot high, and two and a half feet wide by six feet long, had been covered with a sheet of tin. Around this, on improvised benches, sat the musicians, holding in their left hands notched wooden sticks, one end of which they pressed against the tin resonator. At Whiterocks, these rasps were manufactured from any suitable pieces of wood by sawing ten to fifteen shallow notches on one side. At Ouray they were better made, generally being concave on the rasp side, and one, at least, had a crude bird's head carved on the end. The notched sticks were rubbed with short, thick, cylindrical tarsal or carpal bones, probably of cattle, held in the right hands. A steady rubbing on the rasps, amplified by the tin, provided a powerful and not unpleasing rhythm, which was the only accompaniment to the singing.

The songs, in conformity with the Plains musical pattern, began on high notes, descending until they were not audible above the booming rasps.



a



b

Pl. 5*a*. The musicians seated around the resonator. Several notched sticks are on the ground under the bench in *b*.



a



b

Pl. 6*a*, A dance assistant makes a speech during an intermission, requesting the people to participate. *b*, The row of men dance with their backs to the orchestra.

Three separate timings of the rhythm at Whiterocks gave 124, 135, and 128 beats per minute. The musicians sang in perfect unison, having rehearsed Saturday nights for many weeks preceding the dance. It was said that new songs had been made up and that the old ones would be used only when these had run out. A single song, however, appeared to be used the greater part of the dance, a second being introduced only occasionally.

At Whiterocks, a flag portraying an Indian, clad in war bonnet and decorated buckskin clothes, saluting a large grizzly, was erected on a twenty-foot pole behind the orchestra the sixth day of the dance. (See fig. 1.) This was said to represent the Indian who first learned the dance from the bear

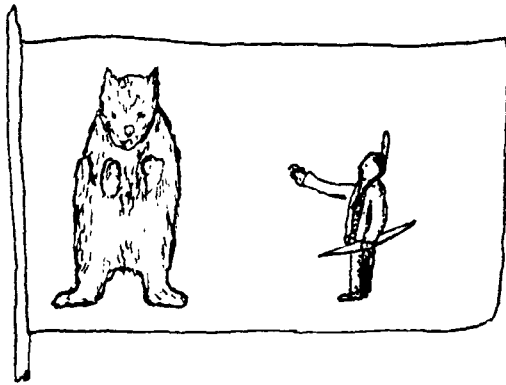


FIG. 1. The bear flag.

THE PERFORMANCE

Sunday, March 22, 1st day.—I went first to Ouray and arrived at the dance ground about 3 p.m. The day had commenced with a violent wind-storm and now a hurricane filled the air with dust that was almost unbearable. Consequently, although nine or ten musicians had already begun to play, only a few small children between the ages of six and nine were present. They danced arm in arm, in imitation of their elders, but the latter remained at home, waiting for the storm to abate. As it continued to roar at five o'clock, I left for Whiterocks, to learn that the severity of the weather had entirely prevented festivities there.

Monday, March 23, 2nd day.—A few visiting Indians had arrived at Whiterocks, and I was informed that a menstrual lodge had been erected in the vicinity of the dance corral for the use of visiting women, as the monthly taboo is still strictly observed.

As the day had dawned clear and warm, I found upon arriving at the dance grounds at 2:25 p.m. that the boarding-school had been dismissed

and the children marched to the corral, which was now held by several score young children, aged six to twelve. While a dozen or more small boys performed on the notched sticks, little girls and boys danced. In a short time, half a dozen men replaced some of the boys at the resonator and the children took up the dance in earnest. A few adults were present but the greater part of the afternoon was devoted to the children, who performed in the same manner and spirit as the adults. The prominence of the children on this and ensuing days testifies to the essentially social nature of the occasion. John Duncan declared that formerly children were not permitted to participate.

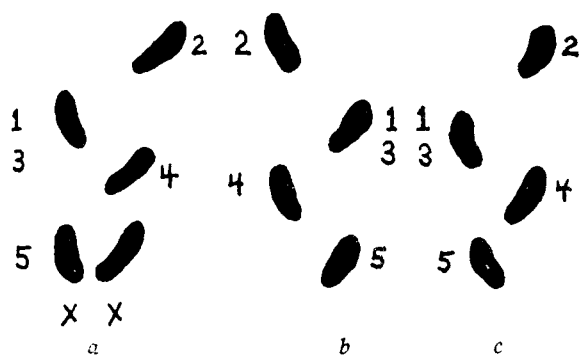


FIG. 2. The dance steps. From the standing position, X-X, in *a*, the dancer advances two steps and returns three. He then advances with the other foot, in *b*, and returns. *a*, *b*, and *c* show three advances and returns, 5 steps being involved in each movement.

The dance proceeded in the conventional manner. The small boys and a few men stationed themselves on the northern side of the corral along the fence on either side of the orchestra, while the women and girls occupied the opposite side. The musicians began a song accompanied by a rapid, irregular rubbing of the notched sticks until the song had been carried through once, when the rhythmic four-four time commenced. At the beginning of the song, the girls marched across the corral, each choosing a male partner whom she designated by a mere wave of the hand, and then lined up east and west with locked arms, facing the musicians. The music now ceased for a moment and when it resumed with rapid rubbing on the sticks the boys sauntered out to form a line, hands clasped, facing their partners. When the music struck a steady rhythm again, the lines swayed forward and backward, two long steps to the front, three short ones back, one line advancing as the other retreated. As five steps complete a dance movement, each advance is with the alternate foot. (See fig. 2.) According to Louis

Abris, this is the way the male and female bears dance in the spring when they come out to mate.

As the dancing warmed up, couples broke from the line and ran backward and forward ten or fifteen steps, the boy on the girl's right, each encircling the other's waist with the right arm. Meanwhile, several young boys armed themselves with long switches to lash the sluggards. This feature, however, is being discontinued, for toward the end of the week, when the adults took a more active part, it was not observed.

It is not customary, as in some tribes, that at the close of each dance the man shall pay his partner. Only white men are expected to pay at White-rocks. I found the following rates satisfactory: five cents or a bag of candy for children, ten cents for young women, twenty-five cents for old squaws. Fortunately even payment could not induce the last to dance very frequently!

It was formerly the rule, according to Jeddie Long Hair, that when a dancer fell, one of the musicians should rub his elbows, knees, back and heels with a notched stick to ward off disease or misfortune. I was told that this had been discontinued but did not have an opportunity to verify it because no one fell.

Until 3:30 p.m. the festival was dominated by the young children, at which time one of the assistants of the dance chief arose and in a loud speech, which lasted several minutes, exhorted the people to participate. (See pl. 6a.) He was largely ignored, however, and a hand-game which had begun outside the corral between two old Ute men continued for the remainder of the afternoon serving as the center of attraction for a dozen men.

At 4:50 p.m., when the whistle sounded to call the youngsters to march home, only a few adolescents who had recently joined the dance remained, although more speeches had been made by the dance assistant.

At 5:30 I left the dance corral with the feeling that the affair had not been taken at all seriously, although it still dragged on. Children and infants had romped in the corral, dogs had been everywhere in evidence, and anything but dignity had been maintained. When I returned at 6:30, the place was cold and empty and those few who had stayed to the end were straggling home.

Tuesday, March 24, 3d day.—At 2:30 the orchestra began to play lazily, and as on the previous day, the school children who had been marched to the corral by their teachers held the stage.

In the middle of the afternoon, during a pause between dances, an old, white-haired woman began to cry bitterly in broken, sobbing wails. It was

soon apparent that she wept in a definite melody, starting in a high pitched moan and descending through minor intervals to a low sob. She repeated her tune many times, but no one heeded her. Groups of people continued to make jokes and laugh, children romped with dogs, and soon the musicians broke in to end her overt grief. I was unable to confirm the report that the spirits of the dead are supposed to return during the Bear Dance. In fact this was explicitly denied and everyone who was questioned answered independently that "probably she had a dead relative who used to do the dance and seeing the people do it now reminded her."

A somewhat larger crowd had gathered by this time but a general indifference was still manifest. The old men stood outside looking through the fence or played the hand-game. The young men loafed or sat on their horses looking over the fence. Only the women seemed desirous of dancing, and, clad in bright shawls, they sat on the southern side of the corral looking for partners. But partners were not available, the harangues of the dance assistant remaining futile. Consequently the women chose partners from the orchestra, which was in continual danger of depletion. When the school children left at about 4:30 p.m., only four or five couples remained, and by 6:30 activities terminated for the day.

Wednesday, March 25, 4th day.—I was not in attendance this day but was informed that the program of the previous day had been followed and that the dance had gained some momentum, for the adults took a slightly more active part.

Thursday, March 26, 5th day.—Last night a blizzard brought intense cold, which continued through the day with temperatures well below freezing. In midafternoon, however, people began to drift toward the dance ground apparently more or less impervious to the cold, but the school children were not permitted to attend. Several fires were built outside the corral and three inside, around which the people huddled. At 4:15 a few musicians began to perform and shortly a very stout squaw chose for her partner, Orens, the tall, mysterious shaman whose deformed mouth is always covered by a bright handkerchief. The two performed a brisk, prancing solo, jostling and bumping each other. Eventually four or five couples aroused themselves, but the temperature dropped rapidly and soon the music ceased.

Friday, March 27, 6th day.—Although the temperature reached zero last night, it warmed sufficiently by afternoon to permit a fair crowd to turn out. Children were again mostly in evidence, but many adults also took part. Visiting Indians from distant places continued to arrive. An admission fee of twenty-five cents was instituted for white people. As the

afternoon passed, speeches were made to encourage dancers, and about 4 p.m. the Bear flag was raised behind the orchestra. When the school children returned to their dormitories, fifteen or twenty couples remained, dancing until nearly sun-down.

The original plan to conclude the dance on Sunday was abandoned and Monday set for the final day, partly because of the delay caused by weather, partly because they preferred to postpone their feast until after Sunday when the white people had left.

Saturday, March 28, 7th day.—As if the entire week had been preparatory to the last few days, a serious interest now was taken in the dance. People made it a point to be present; women dressed in their best clothes and young men condescended to abandon their points of vantage on horse-back looking over the fence and sat in the corral so they could be chosen for partners. Children were again present in large numbers but were less conspicuous in comparison with the adults, and their dancing was more confined to the side lines. The dance proceeded as before, however, and the big day was yet to come. Various men made speeches requesting everyone, including the white people, to join and to be sure to come on the morrow for the big day. Many wagonloads of visitors arrived for the culminating day and made their camps.

I volunteered a contribution to the final feast. Billy Chapoose, after consulting a moment with the musicians, requested a case of canned tomatoes and a large box of soda crackers!

Sunday, March 29, 8th day.—This was the real climax of the Bear Dance. All morning people continued to arrive and by afternoon a large crowd was present. Many white people, too, had come and a fair toll of admission fees had been taken.

The Indians had dressed for the dance in their gaudiest finery so that the female side of the corral flamed with color. The ideal costume for women was: a gayly colored gingham dress, a brilliant shawl (many of these were of silk), hair tied loosely at the neck and hanging down the back, beaded belts and beaded moccasins with high tops, and all the jewelry, preferably Navaho, available. A few women wore long Spanish dresses, spangled with elk teeth. The well dressed man wore an exceedingly tall cowboy hat, with beaded band, colored shirt, dark pants (frequently new overall pants), and—most cherished of all—large, beautifully-beaded gauntlets of buckskin. Earrings of all kinds were used and the older men braided their hair into two bunches which hung over each shoulder, while their heads were covered with colored bandannas which concealed their ears. Hats were worn over these. The young men preferred brilliant bandannas around their necks.

The dance started about 2 p.m., and no one was bashful. Men, both young and old, made themselves available, and the women greedily sought their partners. White men who ventured into the region of eligibles were also chosen, but had to pay the customary small fee at the close of each dance. It might be added that this payment clearly motivated their being chosen.

Activities proceeded with vigor and thirty to forty couples participated in each dance. At first they performed with dignity, the women stepping lightly and the men prancing proud and erect. Soon, however, the lines commenced to bump each other and once the men were pushed back until a number tumbled over the orchestra onto the resonator. Couples split off, dancing back and forth across the corral. No whips were used, however, for this practice has been abandoned. Frequently a popular young man was chosen by two women, who, when the lines split up were seen dancing on each side of him. (See pl. 7.)

A little after 5 o'clock I was forced to leave the dance to return to Salt Lake City, but things were then at their height.

The plan for the remainder of the dance was to stop about sun-down and continue the following morning until noon when the feast was to be held. Formerly, the dance would have continued all night until dawn when, at sunrise, the bear "comes out," a man and woman impersonating bears. In this feature, a female bear appears pursuing her partner in keeping with the female aggressiveness of the entire ceremony, and the two dance for some time—according to one informant, for an hour.⁶ The Ute at Myton are said to have bear skins which are worn by the impersonators. After the bear has come out, the people resume their dance until someone falls when the ceremony is officially closed and the feast ensues. The all-night performance has been discontinued, however, by government regulation, for the importation of liquor cannot be controlled after darkness falls. The ceremony of the bear coming out has also been discontinued.

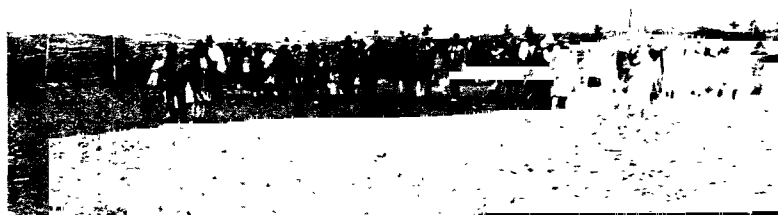
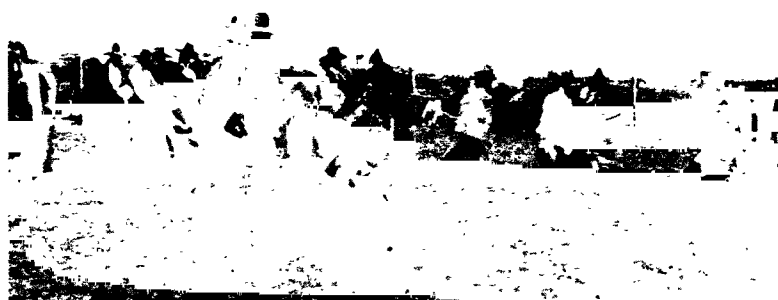
PSYCHOLOGICAL ATTITUDES

Although the Indian now regards the Bear Dance as an opportunity for pleasurable social behavior rather than religious devotion, it nevertheless represents a set of behavior habits foreign to those of the white man's culture. For the relations between the sexes are precisely the reverse of those usually regarded by the Caucasian as proper, normal, and frequently even as inevitable. There is no question that it is the women who are here the

⁶ This is still observed at Ouray according to Reagan's account (*op. cit.*).



Pl. 7*a*. The women advance as the men retreat *b*. The two lines from the west.

*a**b**c*

Pl. 8*a*, Part of the line has split up into couples. The man with the white hat has two girls. The bear flag waves above the musicians in the background. *b*, *c*, Some of the Indians dance in couples.

aggressors; in fact they are even less shy than the males in Caucasian society. Where, then, is the inevitableness of male aggression because of superior masculine strength, dominating character, or quicker physiological sex responses? A pattern has been created in which the male is retiring and diffident, sitting patiently to be chosen and always, according to the custom, accepting his invitation coyly, without murmur.

It is said that these are largely mating dances. Jeddie Long Hair admitted that he and his wife courted during a Bear Dance. And yet courting seems to center in the dance corral, for I did not observe any extra-festivity philandering. At the close of each day, all the people went home or to their camps. I could not verify the popular belief among white people that women who are in search of husbands wear white blankets or sheets instead of shawls. This seems a priori improbable inasmuch as it is they who do the looking or at least make the advances. And with the exception of an aged grandmother, no woman wore white of any kind.

A fertile line of inquiry would be how far the attitudes exhibited in this dance extend into everyday life. If the women make the advances in mate choosing on an occasion when, in a stereotyped manner, they are expected to do so, does it carry over into other phases of the Ute culture? From various sources, I learned that a single standard of morality exists,—the white people would not admit that there was any standard! One is led to wonder, then, whether the social behavior of the sexes is not as much culturally determined as, say dress, and whether the generally observed reactions said to be typical of the sexes do not follow from some other cultural fact, for example, economic division of labor, which may be more basic.

UNIVERSITY OF UTAH
SALT LAKE CITY

A DISCUSSION OF CULTURE CHANGE
AS ILLUSTRATED BY MATERIAL FROM
A TETON-DAKOTA COMMUNITY

By SCUDDER MEKELL

WHEN culture comes to be studied more intimately in terms of processes, the need will be increasingly felt for gathering more complete data on the subjective aspects of culture products within definite ethnographic areas. A study of change as a process of culture, for instance, inevitably leads to a consideration of the transformations in concepts, attitudes, values—in short, the complete psychological *aurae*—surrounding those culture traits which are in flux. For people react not to object-in-itself reality, but to its symbolic derivatives. Therefore only by an investigation of meanings current within a group can one approach an etiology of alterations in specific culture products; an etiology necessary for understanding the nature of culture change in whatever form—invention, diffusion, or modification. Two examples of culture process may illustrate the point. It is easy enough by saying “culture resistance,” to explain the retention of cattle by the Yakut in the face of a new and unfavorable environment. Yet in so doing what deeper understanding of culture as a dynamic phenomenon is obtained thereby? Likewise, it is possible to call “diffusion” the fact that the Tupi Indians sleep in suspended hammocks, whereas the Caraya lay them out carefully on the ground. In fact, so far has the original purpose been lost that the Caraya often throw them about their shoulders for shawls. If this is a case of diffusion in the sense that they obtained their inspiration from a Tupi-type hammock, some misconception obviously occurred in the transference. The most that can be said is that some *value* was put on the new and sorry form of the hammock by those so using it. The riddle of the Yakut cattle and the Caraya hammock lies within the sphinx of the past; in the present one can advance, at most, only astute armchair hypotheses since the psychological milieu during the critical periods of impending change is irretrievable.

This should not discourage those primarily interested in how culture works. An investigation of process implies a from-when to-when relation. Present-to-future may nevertheless be snipped from the thread of time as easily as present-to-past. That is, a culture can be thoroughly studied from the viewpoint that any culture is something in the process of becoming something else.¹ This means probing for trends, significant personalities,

¹ The time element in significant changes is being greatly foreshortened for contemporary primitive cultures by the overwhelming influence of our Euro-American culture. Also, in a quite alien culture, the relevant data and significant aspects are more easily distinguished than in one of the Euro-American group.

salient environing influences (physical, cultural, social, physiological, psychological)—all possible culture reagents at work. Then developments should be watched during a period of years, after which that culture should again be thoroughly combed in order to understand what has taken place during the given time. The various influences, previously postulated, can be re-evaluated in the light of what has actually happened. By this method it may be possible to inject meaning into culture history as a reconstruction of significant events in the past.

It is quite likely that such an ambitious ferreting into the devious workings of culture may not yield a natural science by the very nature of the phenomena concerned. However, the quest is worthy, if only to polish up old facts to sit beside new ones, in the hope that there may develop a deeper understanding of culture forces—and, possibly, of human nature as well. Certainly there is in the person of the American Indian a fund of varied, concrete material with which to work out culture processes—a fund valuable to draw upon while significant changes are still occurring.

A concrete situation will illustrate the kinds of problem involved in a study of culture from this viewpoint. Let us take up in some detail the political organization of the present-day nomadic camps of a certain Oglala Teton-Dakota community observed by the writer during the summer of 1930. This group of about nine hundred and fifty people, most of them descendants of the hostiles under Red Cloud, occupies the White Clay district of Pine Ridge reservation, a district which has earned for itself the epithets "full blood" and "backward." To white people this last is evidenced in the amount of summer traveling, especially in groups, the organization of which shall be described later.²

To begin with, it is well to review what is known of the early political set-up of the Oglala. For this purpose the following has been taken from Dr. Wissler's monograph:³

. . . The Oglala were formerly, it is said, composed of four divisions (Oglala, Kiaksai, Oyukhpe and Wazazies). When reservations were established, two of these divisions were placed under the Pine Ridge Agency. . . .

The two former Pine Ridge divisions are now known as the Red-Cloud camp (Oglala) and the Kiaksai. As far as our information goes, it appears that the former had by far the more complex organization and in the main prevailed when the reser-

² It is true that there are some in the community who do try to stay home at least most of the summer and act "like white people." Of course a study of the total phenomenon of summer nomadism should include this group and those families who make a habit of visiting distant relatives.

³ Societies and Ceremonial Associations in the Oglala Division of the Teton-Dakota, AMNH-AP 11: 7-11, 1912.

vation was established. It was in this camp that the *chiefs society* originated. (*Op. cit.*, 7.)

The following condenses Dr. Wissler's references to the various functionaries in the Red-Cloud camp, our primary interest:

Chiefs society.—The majority of the efficient older men of forty years or more; elected its own members.

Seven chiefs.—Elected for life by the chiefs society. These seven chiefs did not actually participate in the daily government but delegated powers to younger or more virile men, by the appointment of four councilors, the "shirt-wearers," who serve for life.

Four shirt-wearers.—Appointed by the chiefs to serve as the supreme councilors and executives. They are charged with the general welfare. Thus, though theoretically deputies, these four men are the real power in the government.

Four officers (wakic'u^{nsa}).—The seven chiefs, often assisted by the four shirt-wearers and the whole chiefs society, elect four officers (wakic'u^{nsa}) to organize and control the camp. All except the four shirt-wearers are eligible to this office.

Four chief akicita.—Two head akicita are selected by the wakicunsa. These two select two others to serve with them.

Akicita force.—Eight to ten men appointed by the chief akicita, or an akicita society selected instead.

Now as to the duties and functions of the wakicunsa and akicita in particular:

Wakicunsa.

In former times, the tendency was for the people to scatter out in winter, *but early in the spring the camp circle was formed and its government organized. This was initiated by the selection of the wakicun.*⁴

The wakicun are after all the true executives, the shirt men standing as councilors. A tipi was set up in the center of the camp circle as the office of the wakicun in which they occupied "the seats of honor." The shirt men as well as the seven chiefs had seats there as councilors, but did not sit continuously like the wakicun. As soon as invested in office the wakicun appointed two young men to act as orderlies, see that fuel and food were provided, etc. They appointed a herald to promulgate their orders. They also selected two head akicita (akic'ita itac'aⁿ). We were told that the society of chiefs announced the election of a wakicun through the head akicita. (*Op. cit.*, 8.)

Returning to a consideration of the scheme of government, it is clear that all the civil and economic affairs of the camp are in the hands of the wakicun. On all these matters, they are free to instruct and can enforce their orders through the akicita. They decide when to break camp, where to go and again select the new site. Hunting must be carried on when and as they direct. They also see that every person

⁴ My own italics.

receives a fair share of the meat and is provided with enough robes to make the winter endurable. They settle disputes, judge and compound crimes, and make rules to ensure proper decorum in camp. However, our informants all felt their chief function to have been the regulation of the hunt, or the conservation of the food supply. (*Op. cit.*, 11.)

There is some reason for believing that the office of chief was a modern innovation and that the original tribal government of the Oglala was vested in the wakicun. (*Op. cit.*, 11.)

Akicita.

The Indians define the word *akicita* as "those who see that there is general order in camp when travelling from one place to another; those who attend to the duties of overseeing the buffalo hunt so that no one may chase the buffalo singly; those who see that all can charge the buffalo at once or split up the party so that when one chases buffalo one way, the other band closes in; and those who supervise the chase to get better results. They also see that no one kills another, but in case one does, they either kill him or destroy all his property, kill his horses, destroy his tipi, etc." Thus, though in general literature the term *akicita* is rendered as "soldiers" its approximate equivalent seems to be police or marshals.

The *akic'ita itac'a* seem to serve continuously during the season. Although our informants are not quite consistent it seems that, as a rule, the four head *akicita* were chosen from the same society and while it was expected that they choose their assistants from the society, they were at liberty to recruit the force at large. Thus, we were told that if the leaders of a society were appointed as head *akicita*, their administration would be efficient by reason of their having in hand a highly organized corps of able-bodied men upon whom they could call for police service. (*Op. cit.*, 9-10.)

It is thus apparent that the wakicunsa and *akicita* were the most important functionaries during the summer months. Today this is also true of the nomadic camps.

Now a word can be said in regard to the existing political organization on the reservation, although not in detail, since it is complicated by the extent to which the United States Indian Service has assumed certain functions. The chiefs society, at least in the White Clay districts, is still in existence with about fourteen members including the chiefs of bands in the district. Each band, of which there are now thirty-odd on the whole reservation, has its chief. Formerly the United States selected one chief to recognize from each of the seven districts, but now no chief is recognized as such. Over each band, of which there are now more than thirty, there is also a chief, thus making thirty-odd from which to choose the seven recognized by the United States. The "shirt-wearers" are gone, as are the wakicunsa. The *akicita* no longer exist as a body, although in each

band a man or men may act in that capacity under the chief. It is possible that this is an old pattern for small units on those occasions, as in the winter, when the camp circle was not functioning. Lewis and Clark,⁵ for instance, say that each chief had his soldier. Be that as it may, part of the police duty has now been absorbed by the government native Indian police stationed in various parts of the reservation. In addition to offices carried over from the past, recently a new body, the Council of Twenty-one, has been fostered by the Indian Service to dispense with councils of the whole assembled tribe. This body, comprising three members from each of the seven districts, is elected by the adult Indians on the reservation. One of the three council members from White Clay district, a young Indian, is the present chairman of the council. A distinct conflict of power is apparent between this Council and the older men who have heretofore controlled tribal affairs.^{5a}

To these summaries of the old summer hunt organization and of the present officialdom of the Oglala must be added a few salient points on the development of their summer life. As were most other Plains tribes, these Indians have continued to be on the move. Even after the extermination of the buffalo and the removal of Red Cloud's group to a reservation, large parties still went on summer hunts for smaller game. Permissions were granted by the agent until settlement of the surrounding country caused frequent quarrels between the roving Indians and the cattlemen. Finally permissions for such hunting parties were refused. About this time there started, in towns neighboring the reservation, the custom of annual fairs and rodeos. As an attraction for spectators Indians were invited to camp near by during the celebration. There is now a definite pattern for attendance at these affairs.

A prominent "chief" is invited by the rodeo committee of a particular town to bring a group of Indians to the coming show. Usually he is the same year after year. Full and complete responsibility for the conduct of the party rests on his shoulders—even to liability for the behavior of any individual within his group. This is imposed both by the town and by the Indian agent granting permission. The chief passes word through the district about the invitation and proceeds to form an organization to manage the party.

⁵ Reuben Gold Thwaites, *Original Journals of Lewis and Clark*, 1: 164 (New York), 1905: Entry date Sept. 25, 1804—Direct white contacts with the Teton-Dakota were at this period still in a formative stage.

^{5a} Was discontinued in 1931 by vote of a general council. Some form of the tribal council will probably take its place.

Each chief appoints a body of men called either the "akicita," "cank-sáyuhá," or "committee." Akicita, as it will be remembered, formerly designated those exercising the executive and police powers in the ancient organization. Cank-sáyuhá⁶ is the term also applied to the government police on the reservation, and it sometimes happens that one of this force is appointed to head the body. The police idea is also brought out by the fact that quite often the head committeeman is deputized by the sheriff in the town during the rodeo. However, the English word "committee" appears to be superseding the other two. The body of men, designated by all three of these words, keeps order in the camp, distributes rations given by the rodeo committee, collects money for destitute members of the camp, superintends pasturage of all the Indian horses, and executes any suggestion given by another unit of men—the wakicunsa.

These latter are chosen from the headmen of the various bands represented in the camp. The virtual and final authority appears to rest with them, except where outsiders are concerned. In this case the chief stands out—for display in the eyes of tourists, for censure in the event of misconduct of one of his group while in the town. It is not clear whether the wakicunsa are appointed by the chief, although that is the supposition. It may be that the position of wakicunsa, apart from the other headmen, is retained as a sentiment.⁷ This is hinted by the fact that any headmen of a band present usually take their places in the council tipi along with the camp officers who have been mentioned.

The chief likewise selects a camp crier who also has his place as an officer in the council tipi. This tent belongs to one of the wakicunsa and is volunteered, or drafted, for the council meetings. Each morning the wakicunsa order the herald to cry in a certain formalized way the names of certain children, four in number, selected by the council. This is considered an honor to these children—which the parents must repay by serving breakfast to those in the council tipi, that is, to the wakicunsa, committee, herald, and guests of honor, if any. Another four children⁸ are selected for the next meal, and so on. The council tipi is at other times the living quarters for the family of the tent owner. Sometimes this tent has to be struck first as a signal given by the wakicunsa to break camp.

Those chiefs who adhere to older forms appoint still another group—the *dunw'éyan* or "scouts." Some delegate their function to the "committee,"

⁶ Canksayuha ("has the club") is probably a coined word for our "policeman."

⁷ In Short Bull's camp, however, all were called wakicunsa except one, a much younger man.

⁸ A man's wife may be thus honored, especially if there are no children.

which thus serves a dual rôle. Other more practical chiefs omit them entirely. The duty of the scouts is to advance on horseback after the noon halt on the day of entrance into the town where the rodeo is to be held. They, with the chief and his interpreter, go forward to call at rodeo headquarters. Here they are told where to camp, where to get water, what rations will be allowed, and what horse races have been arranged for their benefit. They then return quickly to the camp, where the wakicunsa stand forth to greet them and learn the report of their mission. Singers with a drum sing special scout songs in their honor, just as if they had reported buffalo or an enemy war-party. The scouts must then give away either money or some of their belongings to the singers. Such songs had also been sung on their behalf as they left the camp, but nothing given away. Now the whole group gets under way in order to reach the town by evening.

One may now summarize the main elements in the organization, along with some concrete examples from the summer of 1930. The general patterns used by different chiefs are quite similar, yet individual variations exist which may be significant to a study of culture change:

<i>General pattern</i>	<i>Hot Springs, S. D.</i>	<i>Custer, S. D.</i>	<i>Edgemont, S. D.</i>
Chief	White Man Bear	Young Skunk	Short Bull
Wakicunsa	4 Wakicunsa	4 Wakicunsa	9 Wakicunsa
Committee	4 Com- mittee	4 Canksayuha	Akicita
	4 Cank- sayuha		12 {
	} now com- bined		
Scouts	_____	6 Scouts (2 of them girls)	Dunweyan
Crier	1 Crier	1 Crier	1 Crier
Singers ⁹	Singers	4 Singers	Singers
Council Tipi	Council Tipi	Council Tipi	Council Tipi

Chief Short Bull has conducted parties to the Edgemont Fair for twenty-five years, and boasts of having had no trouble or casualties on any of his trips. His organization is largest in point of numbers— 9 wakicunsa and 12 akicita who are also dunw'eyan. In spite of this apparent deviation in traditional pattern he favors the old formalities in fulfilling the duties of office—as, for instance, the scouting ceremonies. White Man Bear, who happens to be the former chief of our White Clay district, takes a group

⁹ This group is more or less indefinite. The singers obtain their financial remuneration by singing begging songs during the course of an evening's dance in the camp.

to the Water Carnival at Hot Springs. This affair is of only three years' standing. He has organized all three of the trips and has not used scouts, although his four wakicunsa, on horseback, did take the van when on the road. The camp stops for the noon meal before entering the town, as the others do, but the chief and his interpreter proceed along to town *in an automobile*, find out what is necessary, and then return to the encampment. He has also tried having a "committee" to distribute rations and a "cank-sayuha" to keep order. Evidently the scheme was not successful, because this year the same men performed both functions. This chief seems not to be afraid of experimenting with his organization.¹⁰ Young Skunk is between these two chiefs in degree of conservatism. He has followed the general pattern, but is not particularly insistent on old formalities. He was fortunate in being able to get his four singers on the payroll of the Custer affair along with the camp officers.

The attitude of each group toward its particular set of camp officers was very difficult to estimate, and the material so far obtained corresponds in no way to the symbolic derivatives that are necessary for interpretation of processes. The wakicunsa fulfill in their districts about the same function as on these trips, although here they are clothed with solemn tradition and the extra power allotted to former wakicunsa.¹¹ Also most wakicunsa are chiefs of their bands. Perhaps these facts explain why there was little or no observable difference in the attitude of each group toward its wakicunsa—an attitude of great respect and deference. The attitude toward the committee, on the other hand, was more varied. The greatest power was acknowledged them at the Fourth of July celebration held in the district itself. This is the only time the traditional camp circle is now used.¹² This affair comes near the time of the former Sun Dance and arouses much talk of "old times." The "committee" is chosen by the head men of the district, and includes a president, vice-president, secretary, treasurer, and subsidiary members. They seem obliged to consult no one and are in absolute power during the course of the three or four days of celebration. They ride around on horseback as lords of the affair. The committees concerned in the small traveling camps have no such power, although they fulfill the same function of management and control. Their restraining powers are exercised mainly

¹⁰ The same man is trying to introduce a new variety of corn among his people.

¹¹ One of the best pictures we have of the former summer life is in Francis Parkman's Oregon Trail. In 1846 he traveled three weeks with an Oglala Teton-Dakota camp.

¹² The annual Sioux rodeo, recently started near Pine Ridge agency, also employs the circle,

to remove men who have been drinking too much—a surprisingly rare emergency.¹³

Altogether, whatever powers the committee, the wakicunsa, or the chief may have, there is certainly a minimum of observable friction in these camps. Open quarrels of any kind are surprisingly few. The only one witnessed was the start of a fight between two men. Each was led aside by influential persons to talk the matter over. Afterward the two men met and conversed as if the affair were forgotten. The only other case of disturbance occurred one night when two intoxicated Indians entered the camp looking for trouble. On inquiry it was explained that they were from a different district of Pine Ridge and had no close relatives in camp, so that there was no jurisdiction for control.¹⁴ These two occasions were the only instances of trouble observed during the five months.

Obviously there is a distinct political organization functioning at the present time which bears certain resemblances to what we know of the older forms. In the larger gatherings there are, however, some fundamental differences between the old and the new which should be pointed out in order to avoid confusion. An important one is in the character of the camps. The make-up of the present-day camp is smaller, not comprising as many bands, or a complete division of the tribe, as did the ancient summer camp. The 1930 groups are selective in the sense that they are composed of those who *want* to go, there being some who prefer to remain. This latter decision is economically possible within their present culture limits. The other difference of importance concerns the objectives. There may be ancillary motives that would be similar, such as the education of children in tradition by pointing out landmarks and telling their stories. This certainly is a conscious procedure on the part of the grandmother and grandfather today and may well have been in the past. But the main point is that today it is to attend a rodeo; in former times to hunt. These two differences, one, the character of the group, and two, its objective, would have to be kept in mind when making any comparison between the present and the past.

On the basis of what has just been outlined as a concrete instance of culture functioning, there might now be enumerated some of the problems arising when culture is viewed from this angle of interest.

¹³ Methods allowed to them are: (1) to admonish him; (2) to tie such a man in his own tent until sober; (3) to put him under arrest and escort him to the town jail. The latter expedient is very seldom used, as the Indians naturally like to handle their own affairs *inter se*. It was resorted to once in the summer of 1930. A man became unmanageable on the main street of the town, a half mile from the camp, and any other expedient was out of the question.

¹⁴ Even if this were not a true statement of the actual facts, it defines the limits of authority as conceived by the Indians themselves.

1. Could this nomadic, restless tendency be called a culture trait which has been passed on from generation to generation in the same manner as the berry-pounder or levirate?

This question involves the problem as to how deep-set the seasonal rhythms in a culture group can become. Certainly those few younger Indians who could assume a perspective were convinced that the summer moving about was "in the blood," but was decreasing in intensity from generation to generation. On the other hand, distinct incentives to that form of life, explicable in the present, must not be overlooked. A people having no definite occupation for body or mind must surely possess surplus energy, which may easily take the form of gadding about.¹⁵ Also, Indians are quite affectionate in their family relations, so what more natural than to visit some distant relative, or travel with him to a rodeo—especially if his larder be better plenished than theirs. Finally, the towns arranging these spectacles offer inducements to attract Indians.

Altogether the question resolves itself into whether sufficient stimulus now exists to account for the nomadism, or whether these stimuli are merely reenforcing some deep-set cultural tendency. Posing the problem in this fashion, what techniques would lead to a satisfactory solution?

2. What forces are at work for and against the continuance of this nomadic summer life?

An academic division of exoteric and esoteric forces might profitably be made. An estimate of the esoteric forces at work would largely depend on a satisfactory solution of problem 1. The exoteric involve a struggle over the Indian between those white people who are reformers and those who are exploiters of the Indian in that particular environment. The educators and missionaries naturally endeavor to put the Indian to work, while those in towns entice him away. In a long-drawn contest the former will probably win out, as the brunt of civilization is on their side, yet the internal forces must be understood in order to gain a true picture of what is taking place.

3. If the government enforces its ruling against Indians attending such rodeos, what form or outlet for summer restlessness would the Indians adopt, taking into consideration their contemporary culture patterns? Or is this restlessness so vague, so little insistent, that no new group outlet would be developed?

Again one is forced to consider problem 1. The nature and strength of this restlessness would have to be known. If a group outlet were used, it

¹⁵ This surplus, however, is not as great as one might think since they are at best malnourished.

would probably originate from something already present—as larger and more frequent gatherings for dances. The best that can be done is to gather as much information on the present as possible, so that in case this emergency should arise, the new developments could be studied intensively for the light they would throw on culture processes.

4. What can be postulated for the future change in organization on the basis of the present, should such group traveling persist?

This involves: (1) a study of existing variations and their etiology; (2) a study of the ancient organization in relation to the present, keeping in mind what little history is known; and (3) a survey of the attitudes, concepts, and values held now by various factions and individuals toward specific traits in the contemporary and ancient organizations. The actual gathering of data is not the difficult part of this problem—it is the proper treatment of them.

5. If techniques be devised for answering this type of problem for the whole cultural content of a people, and be applied to many ethnographical areas, what would be the possibility of formulating laws of culture processes?

This, of course, is the goal to be kept in mind when making any concrete investigation centering on the problem of culture change—anything less is idle curiosity, however interesting. Nevertheless, at present neither sufficient data nor adequate tools are available with which to formulate general statements or laws. The solution of this type of problem is quite necessary to social science, if its ultimate aim is really to seek knowledge of how society functions—whether or not for the purpose of control. The value of defining the goal lies in thus establishing a criterion for the *relevancy* of the concrete data that must still be filed away for eventual use. Some ideational system is needed to prune the unessentials and control artificially the variables. Perhaps a “culture man” will be invented, corresponding to the economic man in economics in order to differentiate modal behavior; or it may be feasible to construct a “culture geometry” built up from single concepts and axioms. Certainly something should be attempted before our anthropological laboratories, the “primitive cultures,” have become less useful or have entirely disappeared.

In conclusion it may be wise, although perhaps trite, to defend a study of culture process—especially from the viewpoint of change. A now hackneyed sentiment is that man has learned to control the material factors of the world and yet has so far failed to direct the formation of the cultural or social meanings these factors bear in his life—a failure serious in its social context in proportion to the rate of increase in new material products. Con-

trol involves a knowledge of process as well as of objective—whether in the physical or social sciences. May not something at least be learned about culture processes through a study of change in civilizations alien to our own? Probably it is idle to hope that the contexts will be much less complex than our own, yet at least such cultures afford our only hope in establishing comparative laboratories for the study of social laws as necessary to existence as those of physics.

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ORIGIN AND DEVELOPMENT OF THE BURIAL MOUND

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THE origin of the custom of burying the dead in mounds of earth has not commanded much attention in recent times. Probably this is due to preoccupation with the tracing of mound cultures by comparative study of artifacts, and to the fact that the search for origins has gone out of fashion. Now, however, that we have a fairly good idea of the content of the various mound cultures, some speculation upon the manner in which the dead came to be buried in mounds instead of graves may not be amiss. To define the latter term: grave burial is the presence of human remains beneath the surface of the ground in a filled-in compartment, no portion of whose structure lies above the surface. In our approach to the question it is scarcely necessary to offer evidence that, for the world as a whole, grave burial is the older form.

In attempting to account for the origin of mound burial, three kinds of explanations have come to the attention of the writer: those assuming an objective origin; those dealing entirely with the subjective element; and those which picture the trait as arising from interplay between the two elements.

In the first group are three. The mound concept may have arisen from the inability to use all the earth from a grave in filling it in after the body had been put in place. Second, the true burial mound may have resulted from the practice of entombing the dead in its own former dwelling, causing the whole to be consumed by fire and, sooner or later, erecting a new dwelling structure on the same site, repeated performances of the same cycle resulting in a respectable mound. Certain mounds of the Lower Mississippi valley suggest such an origin.¹ Third, while he makes no mention of mounds used specifically for burial, Swanton² attributes the origin of certain enclosures in Oklahoma, a foot or two in height, to a custom of the Creek Indians of sweeping off the "busk-ground" or ceremonial dance ground, several times each year, pointing out that "the earthen ridge is in the nature of an 'accident' resulting from a certain custom." He says further:

¹ Cyrus Thomas, Report on the Mound Explorations of the Bureau of Ethnology, BAE-R 12.207, 1890-91. The burning of houses in which a death had occurred was observed by Le Moyne in a Timucuan village in Florida before 1591. See David Bushnell Jr., *Native Cemeteries and Forms of Burial East of the Mississippi*, BAE-B 71:118, 1920.

² John R. Swanton, *The Creek Indians as Mound Builders*, AA 14: 320-324, 1912.

Other mounds are formed accidentally around trees or other obstructions, the refuse piling up against them instead of being swept past. . . . Conscious mound-building does occur, however, in the mound for the ball-post or the ceremonial dances, and, going farther back, William Bartram informs us that anciently the ballground or "chunkyard" as he terms it, was between the "big house" and the hothouse, and that each of these latter was placed upon an artificial mound.

The inclosures referred to were made "between the time of the removal of the Creek (1836-1840) and 1871."

To the second group belongs, first, the possibility that a small pile of earth was erected over a grave as a marker by a small band wandering in unfamiliar country. Second, the simple idea of an eminence with some symmetry and definiteness may have impressed the primitive mind as the proper place to bury the dead, for reasons not unfamiliar to ourselves. Graves are often found in the tops of natural knolls,³ and indigenous burials occur near the apices of some of the larger conical mounds, well above the floor. Third, there are many instances in which occasional passers-by have stopped to add more earth or stones over a grave for reasons of a symbolical nature. A mound would result from this process. Fourth, the mound may have arisen from the desire to keep the dead from returning to molest the living; the bigger the pile of earth the less chance of such a contingency.⁴

The two explanations based both upon the subjective and the objective are as follows: First, if a small group accustomed to burying their dead in small knolls moved to some situation, perhaps the broad flood-plain of a river, where there were no elevations within several miles, they would possibly conceive the idea of an artificial knoll for their graves in the desire to perpetuate their burial custom. Second, the custom of piling earth over the dead may have arisen in the desire to avoid digging down into the hardpan.

There are two aspects of the custom of mound burial upon which we may be certain. First, that it had an origin; and, second, that it continued to exist. Whatever the importance of these several explanations with regard to the most complicated forms of burial mound, it is fairly obvious that they describe methods by which true mounds could have been, and probably were, erected. Those in the first group however, together with the first one in the third group, tell us nothing of the manner in which mound burial developed into a stereotyped custom passed on from genera-

³ Among the Tunica in historic times cemeteries were placed on hills in the open country. See John R. Swanton, *Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico*, BAE-B 43: 324, 1911.

⁴ Roheim accepts this and the preceding explanation. See Gaza Roheim, *Social Anthropology*, 353, 356, 332, 1926. Boni and Liveright, New York.

tion to generation. In those explanations comprising the second group, as well as the second one in the third group, there are elements which would tend toward acceptance and continuation of the custom. Certain features of mound burial in North America favor its explanation as an expedient to avoid digging into the hardpan. This explanation will therefore be considered in detail.

As to the term "hardpan," books on geology have very little to say of it.⁵ As here used it describes the firmly-textured, well-packed earth, often with a considerable content of clay, which lies from one to three feet beneath ground surfaces in their primeval state. Above this, comprising the zone of weathering, the soil is loose and made up largely of material resulting from vegetable decomposition. The hardpan underlies the zone of weathering in the majority of places in the mound-area of the United States wherever one may choose to penetrate with the shovel. Gravel banks and sandy areas such as that of northern Michigan differ at this level only in degree of hardness, and of course one may occasionally be fortunate enough to strike deposits of water-washed sand where the going is good. The frequent occurrence of graves in gravel banks and isolated sandy spots of glacial origin is in itself sufficient to show that easy digging was an element in the selection of burial sites with some at least.⁶

Beyond the zone of weathering, however, digging with primitive tools⁷ was never easy in any case, and it is possible that depth was given to a grave by piling earth above the surface, obtained from above the hardpan. The logical mode of transition from grave to mound burial would seem to be that of digging a grave down to the hardpan and then gathering earth from above the hardpan in the immediate vicinity, piling it over the filled-in grave into a mound. The next developmental step would involve laying the dead on the surface of the ground and heaping over it earth from the surrounding zone of weathering. The higher the mound, the larger the area

⁵ "Hardpan is an indefinite term usually denoting a relatively hard or impervious layer beneath the soil or in the subsoil. In regions of scanty rainfall hardpan is very commonly of lime or magnesium carbonate where it may be due to scanty gravitational water which carries the materials downward to certain depths where they are deposited, or it may be due to rising capillary water. In many cases the hardpan is probably due to both processes . . . In humid regions hardpans often form in the subsoil where the fine materials of the subsoil are cemented by lime carbonate or by iron oxides." (F. V. Emerson, *Agricultural Geology*, p. 129, 1920 John Wiley & Sons, Inc., New York.)

⁶ In the Boulia district in Australia "the depth of the grave varies with the nature of the soil" (Roheim, *op. cit.*, 354).

⁷ The early literature often refers to the use of pointed sticks for digging graves. See for example, H. C. Yarrow, *Mortuary Customs of the North American Indians*, BAE-R 1:125, 1879-80.

from which the top-soil would be stripped; so that a small mound would increase in height by a double process. Whether or not such easy reasoning as this has any relationship to the actual passage from grave to mound burial, we may never know. But we have these two types of burial mound in the Mississippi valley, namely, the Hopewell and Adena.

It will be asked why it was necessary to dig beneath the hardpan in the first place. It seems probable that, whatever the manner of its origin, the mound trait was accepted and continued in part at least as a result of the desire for a deeper grave as a security against vandalism both animal and human.⁸ As we know, objects which must have represented great wealth to their owners are found in burial mounds by the hundreds. It is in fact difficult to conceive that any people, primitive or otherwise, would for any long-continued period confine artifacts of the quality found in the larger mounds in shallow, sandy, unguarded graves. It is perhaps of some significance in this connection to note that in the Turner Group of Earthworks, Hamilton county, Ohio, where the majority of burials were in shallow graves, the richest find was a ceremonial cache in a mound fourteen feet in height.⁹

It is often erroneous to suppose that a material trait was brought into being to perform the function which it appears to perform when first observed by the outsider. Rivers says:

I am quite prepared to consider whether even such a practice as burial, which seems to have so obvious and utilitarian a purpose, may not have really come into being from some quite different motive.¹⁰

While there is no doubt that the subjective has played perhaps the major part in the formation of burial traits the world over, few will deny that environmental conditions have not only been of some importance but have at times been entirely responsible for the fundamental aspects of certain traits. An instance of this is the platform or "box" burial practiced by the western Eskimo in Alaska,¹¹ owing to the permanently frozen condition

⁸ Reference to the digging-up of bodies by animals may be found in the following: Cadwallader Colden, *History of the Five Indian Nations*, part I, p. 5, 1866, T. H. Morrell, New York. John Heckewelder, *History, Manners and Customs of the Indian Nations*, Philadelphia, Publication Fund of the Historical Society of Pennsylvania, p. 275, 1881. Bacqueville de La Potherie, *Histoire de l'Amerique Septentrionale*, 2:43, 1753.

⁹ C. C. Willoughby, *The Turner Group of Earthworks*, Hamilton County, Ohio, PM-P 8:33, 1922.

¹⁰ W. H. R. Rivers, *Psychology and Ethnology*, p. 43, 1926. Harcourt, Brace & Company, Inc., New York.

¹¹ Ales Hrdlička, *Anthropological Survey in Alaska*, BAE-R 46: 77, 1928-29: "Due to the impossibility of digging sufficiently deep into the frozen ground the western Eskimo buried their dead near or on the surface or among rocks."

of the ground. We find a similar determination of burial customs among the Koryak in Siberia, where underground burial is equally difficult. The Koryak normally practice cremation, but those tribes who live in a treeless country throw their dead into the sea.¹² Until otherwise explained, these instances must stand as the results of environmental conditions.¹³ Whether or not such practices were formed consciously is another question. Despite certain objections to such a process, the "first" burial mound will for the moment be regarded as a result of a conscious desire to avoid the laborious and time-consuming procedure of digging beneath the hardpan. A comparison of certain aspects of Hopewell and Iroquois cultures will throw some light on our subject.

The Hopewell is known only by the method of archaeology, from the excavation of burial mounds. No village sites, recognized as such, have been found. But whatever may have been in the complete picture of that culture, it is certain that the cult of the dead certainly occupied a very considerable part. This conclusion is necessary when we consider the great size of their burial mounds, the elaborate preparation of individual burial platforms, the abundance and richness of mortuary tributes. The Hopewell people must have spent a good share of their time, energies, and properties in the care of the dead. The important thing in this specialization is that it implies the existence of a high regard for the physical condition of the remains of the dead, as well as for their welfare in the after life. This solicitude in its double aspect may well have motivated the desire for a deeper grave at a time when this people were not yet builders of mounds, and the desire may easily have been realized with the result of bringing the hardness of the hardpan forcibly to their notice. If a burial mound did not immediately result, perhaps the first response was to dig deep graves only in special cases. At any rate, our speculations so far demand the eventual appearance of the "first mound-builder" upon the scene, who either laid the dead on the surface or dug a hole in the ground in the usual manner, and heaped a mound over the remains in the manner already described.

Turning now to the Iroquois, who were not builders of mounds, archaeological evidence—the shallowness of their graves¹⁴ and the comparative

¹² Effie Bendann, *Death Customs*, p. 222, 1930. Alfred A. Knopf, New York.

¹³ In this connection there seems to be no reason against calling scaffold and tree burial the product of an environment where the ground was frozen the year around. Conversely, mound burial, which demands a loose condition of the earth, might with a good deal of reason be regarded as southern in origin.

¹⁴ A. C. Parker, *The Archeological History of New York*, pt. 1. N. Y. State Museum Bulletins 235, 236, 1922. Of the burials described herein the least depth was 8 inches; greatest depth 72 inches; average 32 inches

scarcity¹⁵ of their mortuary tributes—shows that they did not have as high a regard for the dead as did the bearers of the Hopewell culture.

The prevalence of flexion in Iroquois burials¹⁶ has an important bearing upon the question before us. This phenomenon was discussed at considerable length by Richard Andree, a German ethnologist, in 1907.¹⁷ He came to the conclusion that flexion is the result of tight binding of the corpse in a doubled-up position to insure against the return of the dead to torment the living. This hypothesis was ably supported "through direct explanations from the lips of those primitives who still use this custom."¹⁸ In discussing the explanation of flexion as a labor-saving expedient, however, several authentic examples are cited in which it was stated explicitly by members of other primitive groups who practiced the custom that they did so for that reason, and the author admits that "here and there" flexion was practiced as a labor-saving device. While flexion has been submitted to a variety of explanations,¹⁹ the labor-saving theory must command some respect. It is interesting to note in this connection that most of the skeletons found in burial mounds in this country are extended rather than flexed,²⁰ for where mound burials are on the surface of the ground, as is true in most cases, there would be no need of flexion as a labor-saving expedient.²¹

In a report upon some prehistoric graves in Massachusetts, H. H.

¹⁵ A. C. Parker, *op. cit.*, 246. At the Ripley site, out of 108 burials, 39 were without artifacts, and 42 were accompanied by pottery vessels only.

¹⁶ A. C. Parker, *op. cit.* Out of a total of 222 burials described only 6 were extended. The rest were flexed with the exception of 20 or 30 in ossuaries.

¹⁷ Richard Andree, *Ethnologische Betrachtungen über Hockerbestattung*, *ArA* 6. 282–307, 1907.

¹⁸ Richard Andree, *op. cit.*, 307.

¹⁹ G. Roheim, *op. cit.*, 340: "In Wetar (Indonesia) small carved wooden images called 'jene,' which represent human beings in the doubled-up position in which the dead are interred, and which is so characteristic of the human embryo, are regarded as embodiments of the soul."

²⁰ Cyrus Thomas, Report on the Mound Explorations of the Bureau of American Ethnology, BAE-R 12, 1894. Out of a total of 1256 burials in mounds described by Thomas, 717 are extended, 106 flexed, 125 bundled, 91 sitting, 6 "standing," 13 "squatting," 6 cremated, and 192 indeterminate. Thomas describes the contents of mounds in 20 different states.

²¹ Some light is thrown upon the meaning of flexion to the mound-builder in the account of the contents of mound 12 of the Turner Group of Earthworks in Hamilton county, Ohio. This mound contained 4 extended and 3 flexed skeletons, all adults. "With all the skeletons occupying a horizontal position, relics were recovered, and great care seems to have been taken in their interment, as they were placed either on a bed of sand, gravel, or flat stones. While with those that were interred in a doubled-up position, no relics were found, nor was there evidence of special care being exercised in their burial." (C. C. Willoughby, *op. cit.*, 85.)

Wilder and R. W. Whipple²² agree with Andree that flexed burial results from binding the body tightly to prevent the return of the dead to "alarm or torment the living." Since the writer can find no mention of flexion in the literature of Iroquois ethnology,²³ it might be regarded as unfair to give references from that source contradicting the origin of flexion in fear of the ghosts of the dead, if it were not for the fact that there is likewise no mention of such fear. Further, according to Morgan:²⁴

The Iroquois had a dance for the dead in which the spirits of the dead were thought to return and join in.

The same authority reports another feature which bears somewhat upon our problems:

A superstitious custom prevailed of leaving a slight opening in the grave, through which it [the spirit] might re-enter its former tenement.²⁵

It may also be pointed out that the placing of stone celts and flint blades with the dead is incompatible with a universal fear of their return. Yet the Iroquois placed such implements in their graves.²⁶

If we accept the labor-saving explanation of flexion we are forced to admit that the Iroquois had very little of the idea that the living could or should do anything for the dead after they were buried, in comparison to the Hopewell people. They apparently buried their dead in the easiest manner possible with no thought of guaranteeing eternal peace to their bones, and continued the custom until their culture was transformed by European colonization. What piling up of earth they did was of a defensive nature. The Hopewell people on the other hand augmented their heaped-over cemeteries with symmetrical walls of earth, which appear to have been of a symbolical rather than defensive nature, representing the highest culmination of their regard for the sanctity of the grave.

²² H. H. Wilder, R. W. Whipple, *The Position of the Body in Aboriginal Interments in Western Massachusetts*, AA 19, 372, 1917.

²³ "At one period they [the Iroquois] buried in a sitting posture with the face to the east. . . . Another and more extraordinary mode of burial anciently prevailed among them. The body of the deceased was exposed upon a bark scaffolding, erected upon poles, or secured upon the limbs of trees, where it was left to waste to a skeleton. After this had been effected by the process of decomposition in the open air, the bones were removed, either to the former house of the deceased, or to a small bark house by its side, prepared for their reception." Lewis Morgan, *League of the Ho-de-no-sau-nee or Iroquois*, 1: 275-276, 1901., Dodd, Mead and Company.

²⁴ Lewis Morgan, *op. cit.*, 275-276.

²⁵ Lewis Morgan, *op. cit.*, 170.

²⁶ A. C. Parker, *op. cit.*, 260-263.

Granting that our explanation of the origin of the burial mound is correct, we see that, on the one hand, a highly developed mound culture exhibits and results logically from an elaboration of the same basic motive which lay behind the erection of the "first" burial mound; on the other hand that the lack of this motive—the absence of preoccupation with the dead on the part of the Iroquois—offers a logical explanation of some of the most important features of their burial customs.

The hardpan theory, as we have stated and examined it, implies a high degree of conscious direction, a determination of a course of action by a feeling for expediency in which the accidental element played no part. We have compared the simple grave with the burial mound, and by noting the advantages of the latter, affirmed that it was consciously created because of those advantages. But neither of these lines of reasoning is entirely satisfactory. It is not necessary, however, in order to maintain the validity of the hardpan theory, to suppose that the "first mound builder," exhausted from his labors in digging a deep grave, sat on the edge of his excavation and evolved the mound concept out of hand. The trait probably originated in a more or less mechanical accident or by-product which was once and once only caught up and fertilized by a special set of social customs or mental attitudes gathered together into a single group of people. According to this view, the idea of a mound of earth over the grave may have suggested itself accidentally to a group of people who adopted it in solution of their desire for a deeper grave. Very likely the accidentally-formed mound, instead of at once suggesting its use and continuance, led the beholders to formulate a new theory of burial symbolism unconsciously (or the idea of a mound may have been emphasized simply by verbal reference to the mound), which in turn and perhaps only in time, reacted upon the environment with the result of duplication of the original mound, while at the same time the individuals concerned thought their altered theology the antecedent, and the mound of earth the consequence. Under this state of affairs, at first the mound would be formed accidentally, or at least unconsciously, later it would be built in obedience to ritual;—an important change, for it would mean that if the fear of vandalism lay behind adoption of the custom, mounds would still be built where there was no danger from that source.

Aside from all speculation, whatever may have been the actual origin of mound burial, diverse factors probably operated in its continuance, over and above whatever ritual demands or practical considerations there may have been. Among these is one which seems to the writer of some importance. The erection of a burial mound was a procedure involving the

coming together of the surviving members of the group in a single enterprise highly charged with activities of a physical nature at a time when the group had been touched by the mysterious hand of death, when its members would unconsciously welcome an excuse to come physically close to one another as in all times of danger: the present danger being that of death, they would find further relief in manifesting the physical properties by which they lived and thereby (perhaps through some rule of primitive magic) to lay raw and violent hold upon life. The resulting mound, outstanding from the earth, would serve as concrete proof of their momentary victory over the ultimate catastrophe. In comparison with grave burial, the duration of this process of unconscious symbolism would be prolonged, and at the same time without so great a physical effort, in the case of a small mound at any rate, as to make physical progress too slow for the spirit. Apparently the primitive custom of feasting and dancing after funerals is due in some measure to this unconscious desire on the part of the assembled survivors to engage in activities which stand for life, for animation, for negation of the calamity which has just been visited upon a member of the group.

The expansion and development of mound burial seems at first quite understandable to the modern mind, accustomed as it is to the "bigger and better." But the problem is not as easy as this. While we have no definite proof, it seems reasonable to believe that the earliest burial mounds were small and that after adoption of the trait there followed a progressive quantitative development which produced mounds seventy feet or more in height. Probably the increase in size and complexity of mounds accompanied and arose from an increase in importance of the cult of the dead; more specifically, perhaps by an increase in the value and number of mortuary tributes.

Just why this development of spectacular forms out of simple beginnings took place is one of the most interesting features of mound burial. The shallow graves which we find in the mound area, those of the Iroquois for example, did not give rise to graves fifteen feet deep. In fact, if graves three feet in depth gave rise in time to graves proportionately as deep as the seventy-foot mounds are high they would extend down into the earth one hundred and five feet, supposing that the original mounds were two feet in height. Evidently, if a cult of the dead demanded larger and more ornate homes for the dead, the hardpan and other considerations attending hundred-foot holes in the ground forced such expansion above the surface. It is significant in this connection that in North America the only radical elaboration of sub-surface graves which still retains the fundamental fea-

tures of the simpler graves, which are mere holes in the ground, is a feature of the Adena culture, which is a mound-culture, and is close enough to the Hopewell to be regarded as an archaic form of that culture. The typical Adena sub-floor burial chamber is rectangular, ten or fifteen feet in length, nearly as wide and about six feet in depth. In the original Adena mound there was a similar sub-floor chamber containing burials, while burials were also found above the floor in the body of the mound.²⁷

Since the Adena people practiced sub-surface and true mound burial at the same time, they provide us with an early stage in our scheme of development of mound burial, a transitional stage between grave and mound burial characterized by high development of the *mound* while the grave was still retained, *but much deeper and in a highly elaborated form*. The Adena appears to be older than the Hopewell by comparison of other features than those of a structural nature. The former, for example, were users of copper, like the latter, but for ornamental or symbolical purposes only.²⁸ Of course one might say that the Adena represents the amalgamation of two peoples, one burying in sub-surface graves and the other in mounds. This may have been the case. But one cannot determine such a matter on archaeological evidence alone.

To summarize: The mound building trait is the product of four circumstances which, listed in what is believed to be the order of their occurrence, are as follows: (1) High regard for the sanctity of the grave made necessary (2) its protection from vandalism, animal or human, which could be effected only by deeper graves and when (3) the mound was either consciously conceived or suggested accidentally in one or more of a number of ways, (4) it was accepted as a solution because of the difficulty of digging beneath the hardpan.

Mounds of the Adena type, with large sub-floor tombs, exemplify a transitional stage between grave and mound burial.

Once the mound building trait was formed, factors additional to those responsible for its adoption operated to insure its continuance.

OHIO STATE HISTORICAL SOCIETY
COLUMBUS, OHIO

²⁷ W. C. Mills, Explorations of the Adena Mound, Ohio Archaeological and Historical Quarterly, 10. 452, 1902.

²⁸ H. C. Shetrone, The Mound Builders, D. Appleton and Co., New York, 1930, The Culture Problem in Ohio Archaeology, A A 22:159-161.

A CENTRAL MEXICAN INSCRIPTION
COMBINING MEXICAN AND
MAYA DAY SIGNS

By B. L. WHORF

WHEN in Mexico during the winter of 1930, engaged in Nahuatl linguistic research, I visited the village of Tepoztlan in the state of Morelos and while there made the accompanying sketch (fig. 1) of a band of sculptured figures in the ruined temple of the Tepoztecatl, the ancient tutelary deity, which stands on a great rock pinnacle overlooking the town.

The temple has been described by Saville,¹ Seler,² and Novelo,³ but nowhere do any of them discuss the figures dealt with herein. The structure bears indications⁴ of dating from the reign of the Aztec king Ahuitzotl, who died in 1502; but as the figures in question show likenesses to forms known to be over a thousand years more ancient than this, it may be that in the building of the temple they were carved in obedience to artistic traditions, or copied from older architectural work of this region. They form a band extending along the top of a much more conspicuous frieze of larger carvings on the inner walls of the inner room or court. My sketch and remarks apply only to a clearly preserved portion of the band in the southern half of the court.

Stylistically and on the basis of general probabilities the figures would, I think, strike any student as a band of the day signs of the tonalamatl, such as one sees continued interminably along with the successions of pictures in the Mexican codices. But many of the signs bear little resemblance to their Mexican form, the form corresponding to the Aztec names Cipactli, Ehecatl, Calli, etc. Nevertheless, as we shall presently see, the signs Acatl, Malinalli, and Atl are in practically their regular Mexican forms, and to clinch the matter are precisely the correct number of signs apart. But moreover, and here the unusual enters, some of the signs bear an unmistakable likeness to the quite un-Mexican-looking Maya forms, corresponding to the Maya names Imix, Ik, Akbal, etc., and these signs, too, are in exactly their proper places. The ruin is of course far removed from historical Maya territory, being only about forty miles from Mexico City in a region of Toltec and post-Toltec influence.

¹ AMNH-B, 1896; also Monumental Records, February, 1898.

² BAE-B28: 347; Die Wandskulpturen im Tempel des Pulquegottes von Tepoztlan, *Gesammelte Abhandlungen*, 3: 487.

³ *Guia para Visitar las Principales Ruinas Arqueologicas del Estado de Morelos*, Publ. Sec. de Educacion, Publica 3, 1929.

⁴ See Seler, BAE-B28.

As I sketched the figures their general un-Aztec look quickly struck me, but the first clear impression that I was drawing a *Maya hieroglyph* came when I began to copy the sign figure 1, no. 10. Comparison with a very common Maya hieroglyph, whose most usual form is that shown in figure 2, no. 10, indicates the similarity. The Maya sign is a hand having the distinctive characteristics of a prominent thumb more or less opposed toward the fingers, and invariably on the wrist a circle usually having a central dot and a small tag-like projection from the rim. The fingers are usually bent toward the thumb, but there are forms on the Maya monuments in which they are extended straight as in the Tepoztlan figure. This sign is a hieroglyphic element of wide and varied use, but it is especially a grapheme⁵ that stands for the day sign Manik. In the Mexican day-sign system there is no grapheme even remotely resembling a hand. The sign corresponding to Manik is called Mazatl, and its grapheme is a deer's head (figure 2, no. 9).

Can it be that this Tepoztlan hand-figure represents Manik-Mazatl? Do the other signs fall into the proper places required by such an assumption? Let us see. In both day-sign systems the sign before Manik-Mazatl is called by a similar name, Cimi in Maya and Miquiztli in Aztec, both meaning "death." The grapheme in both systems is a death's head or head of the death god, stylistically different, however, in the two systems. Figure 2, no. 5 shows the Aztec type of grapheme, a fleshless skull; figure 2, no. 6, the Maya type; and figure 2, no. 7, the hieroglyph of the Maya death god as it appears in the Maya codices. Now the direction of Aztec and Maya writing is like our own, from left to right. The figure to the left of the hand (figure 1, no. 9) bears no resemblance to Miquiztli or Cimi. But the figure to the *right* of the hand (figure 1, no. 11), strange to say, shows a most curious likeness to the hieroglyph of the Maya death god. The two prefixes attached to the head are especially characteristic of this grapheme, indeed are found nowhere else. The Tepoztlan glyph however has a suffix that is not found in the death-god grapheme, but which is an element in other Maya hieroglyphs. It is particularly characteristic of the month-sign Kankin, and according to Seler represents a human skeleton. It seems to be related to the skeletal representation shown in figure 2, no. 8, taken from figure 115, page 86 of Spinden's *Maya Art*, where Spinden treats of the artistic symbolism of bones and death among the Maya.

⁵ Grapheme is a word formed on the analogy of morpheme, semanteme, to denote any written symbol, especially as a linguistic factor, in place of "ideogram," "pictograph," or the ambiguous "character." In discussing hieroglyphs it is desirable to have a term that does not presuppose anything about the nature of the denotative process employed.

The fact is, as will soon be proved, that we have here an inscription which for some unknown reason is written in reverse order, from right to left, and this death-god sign stands for Cimi-Miquiztli. Once this is realized,

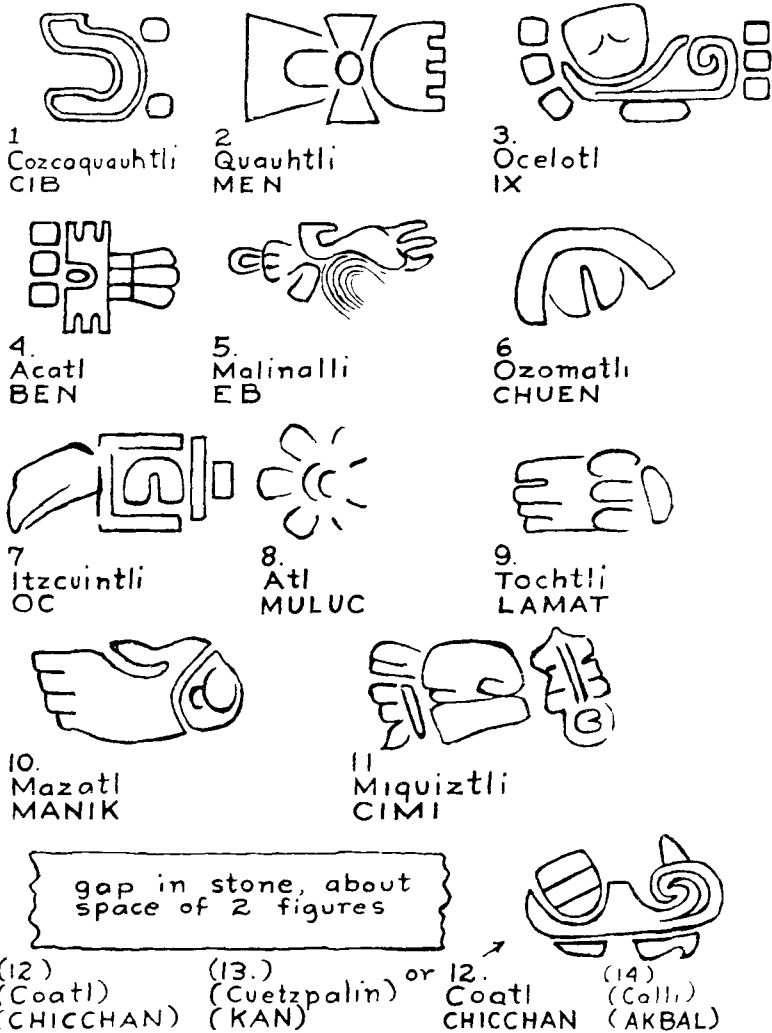


FIG. 1. Inscription in the Temple of the Tepoztecatl, Tepoztlan, Morelos, Mexico.

the student of the subject will soon notice another out-and-out Maya sign, namely the ninth figure to the left of the hand, figure 1, no. 1. In the Mexican system the ninth sign after Mazatl is called Cozcaquauhtli, and its

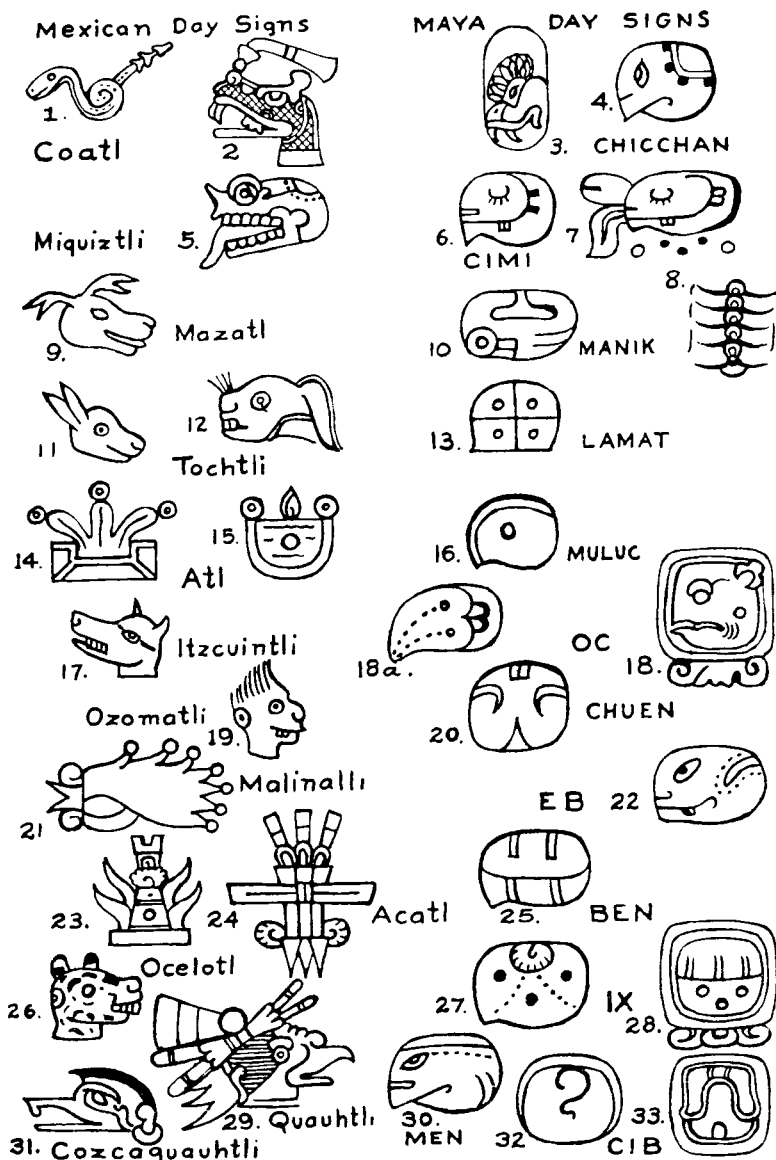


FIG. 2. The Mexican and Maya day signs from Coatl-Chicchan to Cozcaquauhtli-Cib in their order. Bibliographic references: 1, 9, 11, 15, 17, 19, 23, and 26 from Sahagun ms.; 2 and 5 from Zouche Codex; 12 and 31 from Fejervary-Mayer ms.; 14 from Codex Telleriano-Remensis; 21, 24, and 29 from Seler's *Caractère des Inscriptions*; 3, 4, 6, 13, 16, 18, 20, 22, 25, 27, 28, 30, 33 from Morley's *Introduction to Maya Hieroglyphs*—3, 18, and 28 inscription forms from p. 38, 33 an inscription form from p. 95, the others codex forms from p. 39; 7, hieroglyph of death god, from Dresden Codex, p. 15, 8, representation of human skeleton from Uxmal, from Spinden's *Maya Art*, and 32, Codex Peresianus, from Spinden's *Maya Art*, p. 94, 10, from Codex Tro-Cortesianus; 18a, Maya hieroglyph based on dog's head and related to Oc (18), from Dresden Codex.

grapheme is the head of a vulture (figure 2, no. 31) or of an eagle wearing a collar. In the Maya system the ninth sign after Manik is called Cib, and its grapheme (figure 2, nos. 32 and 33) is a curved line like a question mark or sometimes rather like a letter C turned over or turned backwards. This last is the form of the Tepoztlan figure.

The two dots beside the curve are not found in the Maya Cib, but they nevertheless confirm the identification. Seler, from the fact that the sign Cib was often represented on liquor vessels, connected it with a similar sign placed by the Aztec on their drinking vessels and called ometoch, from the god of intoxication Ome Tochtli, literally Two Rabbit. This god is often represented (e.g., Sahagun Madrid Manuscript, under his name Totochtli) carrying a shield with a sign very similar to the Tepoztlan figure. An Aztec note on the Sahagun picture says that the god bears an "ometoch-chimalli," that is, "shield with the device Two Rabbit." In our present case the two dots are merely the usual expression of the number part of such a name as Two Rabbit. Ome Tochtli and Tepoztecatl are considered to be the same or related deities, so that their especial cult in Tepoztlan might perhaps employ their emblem as a day-sign grapheme when it would not be so employed elsewhere. The point is that they should have employed it, not for Tochtli or Rabbit, but for Cozcaquauhtli or Vulture, of all signs the one corresponding in position to Maya Cib.

Let us check the positions of the other signs proceeding from no. 10, or Manik, toward Cib. No. 9 is too worn to be distinctly recognizable as anything, yet by comparison with the form of the Mexican sign Tochtli, shown in figure 2, no. 12, it will be seen to resemble a worn-down carving of this form.

The next sign, no. 8, is crowded against the following sign no. 7 and is placed in an angle where the band turns the corner of the wall. If compared with the grapheme of the Aztec sign Atl (Water) shown in figure 2, no. 14, the likeness will be evident.

No. 7, the next figure, occupies the place of the Aztec Itzcuintli (Dog) and the Maya Oc. It shows a head that looks more like a toucan or some such bird than a dog. It certainly shows little resemblance to the naturalistic dog's head (figure 2, no. 17), the grapheme for this day sign in the Mexican system. Now a toucan-like conventional head, shown in figure 2, no. 18a, is one of the commonest hieroglyphic elements in the Maya codices, and Beyer⁶ has shown that this conventionalized head is derived from that of the dog. The Maya day sign corresponding to Itzcuintli is called Oc, and has two distinct forms of grapheme. The form of the codices has no

⁶ AA 31, 1929.

resemblance to the Tepoztlan. The form of the Maya inscriptions, shown in figure 2, no. 18, may be compared with the Tepoztlan form. The dog hieroglyph may be further compared in that it always bears a suffix containing a two-lobed figure, while the Tepoztlan glyph shows suffixed to the head a square frame containing a two-lobed figure.

Sign no. 6 shows a certain resemblance to the Maya Chuen, figure 2, no. 20, and is quite unlike the naturalistic monkey head of the Aztec Ozomatli (figure 2, no. 19).

Sign no. 5 agrees with the Aztec grapheme for the same position. Although it is much worn and a cavity in the stone seems to have been scooped out of a part of it, the brush of tongue-like streamers characteristic of Malinalli is recognizable. (Cf. the form of Malinalli shown in fig. 2, no. 21). Here there is no trace of the Maya form (Eb, fig. 2, no. 22).

Sign no. 4 shows in proper position the distinctive features of certain forms of the Mexican Acatl. (Cf. especially the form shown in fig. 2, no. 24.) The Maya Ben, figure 2, no. 25, is quite different.

Sign no. 3 however is a very strange one. It is certainly nothing like the Mexican Ocelotl, a jaguar head, figure 2, no. 26. Nor is there any external resemblance to the Maya Ix, figure 2, nos. 27 and 28. And yet it contains in a curious way two elements of the Ix grapheme. The really essential element of the grapheme is the three dots, and the Tepoztlan figure displays very prominently three large dots on the left and three smaller dots on the right. Distinctive of the codex form of Ix are the two converging dotted lines, and the Tepoztlan sign bears a shield-shaped figure on which are two similarly placed lines.

Sign no. 2 bears no resemblance to the Maya Men (fig. 2, no. 30) nor to the ordinary form of the Aztec Quauhtli, an eagle's head. But Seler⁷ pictures a form of Quauhtli (fig. 2, no. 29) in which the eagle wears a head-dress that compares interestingly in its main features with the Tepoztlan figure. This brings us to sign no. 1, or Cib, which we have already discussed. There is a sign beyond this which I have not shown, as it is worn and hard to make out, and I did not secure a good drawing. It shows no likeness to the unmistakable Aztec Olin or to the Maya Caban.

What does the band show to the right of sign no. 11, or Cimi? A blank space where the stone has been broken away. Beyond this space appears one more figure, no. 12. Of course we do not know whether any signs were inscribed in this space, or if so how many, though I should say the space would contain only two. Allowing two signs for the space would make no.

⁷ Caractère des Inscriptions Aztèques et Mayas.

12 become no. 14, the position of the Aztec Calli or the Maya Akbal, neither of which has any resemblance to it. It is a conventionalized serpent jaw, a common Middle American art motive. Therefore I think that no signs need be allotted to the broken space and that we have here the day sign before Cimi-Miquiztli, which is the Maya Chicchan (fig. 2, no. 3 and 4), the Aztec Coatli (Serpent) (fig. 2, nos. 1 and 2). The common Aztec form is not conventionalized to the degree of this figure.

It is perhaps these figures to which Novelo refers in his words:

—hay otros jeroglíficos cuya interpretacion no ha sido posible de hacer, alguno de los cuales tienen cierta semejanza con los mayas.

Moreover he refers to the Maya influence in these terms:

—parece existir en los relieves de origen tlahuica (Tepoztlan y Xochicalco) cierta influencia maya cuya cultura floreció en Mexico, como se sabe, en los primeros siglos de la Era Cristiana.

He also tells us that pilgrims from far-away Chiapas and Guatemala, regions once of Maya culture, were accustomed to visit the sanctuary of Tepoztlan.

Yet it is certainly unexpected to encounter here, not far from Mexico City, definite day signs denoted by graphemes which, like Cib and Manik, were being carved on the structures of the old Maya Empire in distant Central America a millennium and more before the date of the Aztec temple on which they appear interchangeably with ordinary Aztec forms. And why was the sign series recorded backwards? Here again the only comparable thing that I can think of is a Maya one, the fact that the Maya inscriptions record a number series in reverse order when it is counting back into the past; that is, when its total is to be subtracted from, and not added to, a beginning date, in order to reach a second date. Does this Tepoztlan inscription seek to show the tonalamatl receding into the past?

We have here for the first time evidence of a definite, clearly demonstrable rapport between Nahuatl hieroglyphs and early Maya ones. The whole subject of the relation of Mexican and Maya graphemes, as it reveals itself in other places, is something of which I hope to treat extensively and from a linguistic viewpoint at another time.

WETHERSFIELD, CONNECTICUT

ANCIENT WHEAT AND BARLEY FROM KISH, MESOPOTAMIA

By HENRY FIELD

IN VIEW of the interest in the more or less recent discovery of several samples of grain from the excavations at Kish, it seemed desirable to place on record the conclusions of various botanical experts on these specimens. The date of the jars in which the grains were found was accurately determined by inscriptions, tomb-groups, pottery, and other objects which were found in the same stratigraphical level. These grains are therefore the oldest examples of cultivated cereals in Mesopotamia.

The site of the ancient city of Kish is located sixty-five miles south of Baghdad and about eight miles east of Babylon. In Sumerian times Kish was divided by the river Euphrates into an eastern and western metropolis. From the epigraphical records, it was the "first city founded after the Flood." In this connection it is interesting to note that Mr. L. C. Watelin, field director, discovered evidence of two local floods which swept over the eastern portion of the city about 3200 B. C. and 4000 B. C., respectively. The former may well be the traces of the Biblical deluge.

The alluvial plain upon which Kish was built is even today extremely fertile when water is available. There are several large canals which bring water from the river Euphrates and by the most primitive methods of irrigation—neither the *noria* or Persian water-wheel, nor the *sakieh* is used—the soil is intensely cultivated. The crops are not heavy, which is to be expected after six thousand years of almost continual cultivation where the principle of rotation of crops is unknown and the nitrogen content of the soil never replaced.

During the spring of 1928 the writer observed a peculiar scarecrow in the middle of a large cultivated area near Kish. This consisted of the vertebrae of a camel piled on top of each other and held in place by a stick on which each vertebrae was threaded. The local Arabs insisted that not only was this an efficient method for keeping away birds, but that its magical properties increased the quality and quantity of the crop.

From an archaeological and anthropological point of view the Kish area is of considerable importance since the excavations conducted by the Field Museum-Oxford University Joint Expedition during the past eight seasons at Kish and Jemdet Nasr (eighteen miles northeast) have revealed not only the cultural attainments of the Sumerians (possibly preceded by a proto-Semitic neolithic phase), Babylonians, and Sassanians, but also the interesting fact that the physical characters of these Arabs have remained little changed during the past six thousand years. Thus the region with which we

are dealing is the oldest inhabited site from which our civilization has directly evolved.

In dealing with the various reports on the samples of wheat, barley, and spices collected by the writer during two seasons at Kish (1925-26 and 1927-28) it must be stated that these specimens were handed over to Field Museum Department of Botany and Mr. James B. McNair, Assistant Curator of Economic Botany, very kindly referred them to the various botanical experts hereafter quoted.

WHEAT

Early in January 1926 Professor Stephen Langdon, director of the joint expedition, and professor of Assyriology in the University of Oxford, was conducting excavations at Jemdet Nasr, where magnificent examples of painted pottery (type Susa II) and pictographic tablets in linear script were found. The writer was also working at Jemdet Nasr on January 6, and, while clearing out a painted jar, discovered some seeds which were sent to Field Museum for identification. These seeds lay at the bottom of the jar, which had been much blackened by the fire that destroyed the city during the fourth millennium before the Christian era.

According to Professor Langdon, this seed is of particular value since it comes from the very early Sumerian period, *circa* 3500 B.C.

Professor John Percival, of Reading, an authority on the wheat plant, reported to Professor Langdon that the seed was that of "*Triticum turgidum*," Rivet or Cone wheat. Professor Langdon adds:

Thus the statements of Herodotus, Strabo, Pliny and Berossus concerning the astonishing productivity of Babylonian wheat are confirmed. We have at last a discovery from the Sumerian period contemporary with pre-dynastic Egypt. A good many samples have been found in Egypt from the same period, but these are all, I am told, spelt-wheats and a less developed product than the "*Triticum turgidum*" which was found at Jemdet Nasr.

The Sumerian word for wheat was "*she-gib-ba*," a word meaning "the dark grain," which corresponds admirably with the grain found by the Expedition. The Babylonian word "*Kibatu*" was borrowed from the Sumerian word, and is rendered "*Henātā*" on Aramic dockets, which is the Hebrew "*ḥiṭṭā*," "wheat." There is no longer any doubt concerning the great antiquity of this species of wheat in Mesopotamia, although the word for Emmer (*Triticum dicoccum*) occurs even more frequently than the word for wheat on the pictographic tablets. Professor Percival, who has also examined most of the cereals found by Sir Flinders Petrie in Egypt, says that the Jemdet Nasr wheat is the first really ancient sample of "*Triticum turgidum*" which he has seen. The discovery confirms the theory, long accepted by historical botanists, that Mesopotamia is the original home of the bread-making wheats.

Professor Langdon stated further:

The Botanical Department of the Field Museum has determined this wheat to be "*Triticum vulgare*" or common wheat, called club wheat or "*Triticum compactum*," and with this analysis O. F. Phillips of the United States Bureau of Agricultural Economics agrees. Dr. O. Stapf, editor of the Botanical Magazine, Kew Gardens, sent me the same independent statement. He informed me that this wheat is "*Triticum compactum*" or club wheat, which is the only good bread-making wheat, and the most developed of all species of the wheat plant. Sir John Russell of the Rothamstead Experimental station, is non-committal between these two views, but I infer that he favors the view of Dr. Stapf and the botanists of the United States. If this be true then the most ancient Sumerians had succeeded in growing the finest kind of bread-making wheat and were far in advance of the agriculturists of pre-dynastic Egypt. If we may depend upon the Aramaic translation of the Babylonian word, referred to in my previous letter, this should determine the kind of wheat grown by the ancient Hebrews also.

In support of his determination of the wheat as *Triticum turgidum*, Sir John Percival states in a letter to the London Times:

I was not surprised to see my letter of February 3 from Professor Langdon regarding my identification of the very interesting wheat which he discovered in Mesopotamia; I also was prepared to find that some botanists, and others not botanists, consider the grains to be those of Bread wheat (*Triticum vulgare*) or Club wheat (*Triticum compactum*). The only surprise is that no one has ventured to name it Emmer (*Triticum dicoccum*). The grains submitted to me are exactly matched in form and size by several varieties of *Triticum turgidum* which are grown annually at the Agricultural Botanic garden at the University here (Reading, Berks, England), and I must respectfully beg to disagree with those who have named them *Triticum vulgare* . . . Controversies of the identification of these highly complex cereals should be left to those who give special attention to them, and not until this is done shall we make any real progress in the elucidation of their evolutionary history and indirectly assist the anthropologist and archaeologist in the problems of the origin and movements of the earliest civilizations.

O. F. Phillips in support of his decision as to the classification of the specimens says:

The botanist or agronomist is governed largely by the plant itself, that is, plant habit, roots, stalk, stem, leaves, flowers, awns, etc., of course giving consideration to the ripened seed. When the seed is alone, having been separated from the plant, many agronomists of my acquaintance are frank to confess that identification then becomes to them more difficult.

In my twenty-five years experience in inspecting and handling commercial grains and particularly during the past ten years as chairman of the Board of Review of the Grain Division, Bureau of Agricultural Economics, United States Depart-

ment of Agriculture, which Board is charged with the interpretation of the United States standards for grain, and in that capacity, annually reviews from 40,000 to 60,000 samples of grain from all over the United States, I have not only made a careful study of the kernel characteristics of all known varieties of wheat grown in the United States, but of the principal varieties and classes grown all over the world. My collection of the world wheats, I believe, is one of the largest in the country.

In the above capacity I have been consulted at times by agronomists of our various agricultural colleges relative to classification of our different wheats. In view of the above, however, I am quite ready to yield from my personal opinion when a kernel can be grown and the botanist or agronomist prove the facts or classification from the growing plant. Unfortunately in this particular case that cannot be done.

You will recall that upon my first examination of Professor Langdon's wheat I expressed the opinion that it was a "club" wheat (*Triticum compactum*), but in referring to it in an article which was published in our Department letter, February 4 (1927)—a copy of which I gave you—I stated that it resembled either our "club" (*Triticum compactum*) or "Pollard" (*Triticum turgidum*) wheat, which would seem to indicate a doubt in my mind between the two classifications. It would be a very wise man, indeed, who could state definitely, after 5500 years and in their present condition, the true classifications of these kernels. It will be noted in many of these kernels that the crease is very narrow, tight and slightly crooked, and that the brush ends show a cheek smaller in size than the other, all of which are more characteristic of "*Triticum compactum*" than of "*Triticum turgidum*." True, the kernels have a dorsal hump, but this is also characteristic of "*Triticum compactum*."

In comparing these kernels with samples of Rivet wheat grown in England and submitted to me by Dr. John Engledow of Cambridge, England, it is noted that Rivet wheat, and other varieties of Pollard wheats for that matter, have a more open straight crease, some of them pitted, the cheeks are more even and uniform and the kernels more uniform in size. The fact that Dr. Franz Unger, Austrian botanist and scientist, who, as a result of his research work in Egypt, claims that the early wheats grown there were "Pollard" wheats and that they were known to ancient Egyptians, being figured on their monuments and found in graves of great antiquity, would seem to give credence to Dr. Percival's claim, but these kernels come from another country of equal or greater antiquity with no definite knowledge of intercourse between the two countries at that time.

While I appreciate the significance of a statement emanating from such authority as Dr. Percival, a further examination of these kernels convinces me that my original opinion is more nearly correct, that they are of the "*Triticum compactum*" family; it seems that Dr. Stapf is also of this opinion . . .

I am sure you will pardon the personal reference to my past experience in this letter, as it is given at your request to establish my qualifications in passing on this wheat.

A photograph of some of these grains may be found on plate 12 in Field Museum Annual Report for 1926.

BARLEY

During the season 1927-28, Mr. Watelin continued excavations down to water-level below monument "Z." One meter below the "red-earth stratum" and three meters northeast of the "witness," or portion of monument "Z" temporarily left standing by Mr. Watelin, the writer found two small unpainted jars containing seeds. These grains were sent to Field Museum for study, and have been identified as barley.

The two samples and a third from Jemdet Nasr were sent for identification to the Bureau of Agricultural Economics of the United States Department of Agriculture in Chicago. The report, dated November 6, 1929, reads as follows:

Reference is made to the three samples of ancient grain which we examined in the laboratory the other day. For purposes of identification, the samples were contained in three small bottles, (a) and (b) from Kish, and (c) from Jemdet Nasr.

While time and the elements have charred and blackened the kernels to the extent that positive identification is rather difficult, we are of the opinion that each of the samples is of some form or type of barley. We are influenced in arriving at this conclusion by the appearance and shape of the crease (slightly twisted in some kernels), flattened backs, boat-shape of kernels, and germ shape, all of which are more or less common to our modern barleys.

Time, abrasion, and possibly method of threshing, all have had a part in accounting for the apparent absence of the outer husk or hull of the kernels.

The grain in bottle (a) from Kish is apparently a different type than that in the other two bottles, as the kernels as a whole are much smaller. The barley characteristics are much more pronounced in bottle (b) sample.

There can be but little doubt, however, that each of the three samples is of some species of barley.

Samples of these seeds were also sent to Mr. H. V. Harlan, Principal Agronomist in Charge of Barley Investigation in the United States Department of Agriculture in Washington. Mr. Harlan reported on November 8, 1929 as follows:

I am able to make only a partial determination of the barley in the samples which you recently forwarded. All three samples contained seeds of 6-rowed hulled barleys. This does not preclude the possibility of there being hull-less or 2-rowed sorts present. I could, however, find no kernels which could be identified as either. The grain seems to be slightly smaller than that coming from Egyptian excavations, and I think it is safe to say that it represents different varieties.

These grains of barley are figured in Plate VI of Field Museum Annual Report for 1929, and on page 54 is the following account by Dr. Berthold Laufer, Curator of Anthropology at Field Museum:

An interesting discovery was made this year in tracing three lots of barley in some of the pottery jars excavated from the low strata of the ruins of the ancient city of Kish. Botanical investigation disclosed the fact that this barley is of the six-rowed variety, and this, as far as is known here, is the first actually brought to light in Mesopotamia. Barley seeds of the four-rowed variety were formerly discovered at Nippur. The six-rowed type is the characteristic prehistoric barley which was known to the Indo-European nations, numerous examples of which have been found in the Swiss Lake dwellings. It is this species which was taken along by the Anglo-Saxons on their migration from their original home to the British Isles and then cultivated by them in England. In view of the discovery of the six-rowed barley at Kish the conclusion is now warranted that this cereal, so important in the development of agriculture, was first brought into cultivation at a prehistoric date in Mesopotamia where the wild species also occurs, and that the cultivated species was diffused from that center to all other countries of the Near East, Egypt, and Europe.

OTHER SEEDS

During March 1928, while Mr. Watelin was conducting excavations at Jemdet Nasr, the writer found an unpainted jar which contained seeds, which were sent to Field Museum for identification. The seeds were also dispatched to Mr. H. V. Harlan, who reported on February 7, 1930 as follows:

I have received the sample of seed which you sent late in January. I have been unable to determine or to have the seeds determined with certainty. Both Mr. Brown and I feel that the major number of seeds included in the sample are from some umbelliferous plant and were probably used for seasoning. A smaller number of seeds are very similar to those of certain species of *Panicum*. I am unable to guess what this may mean, unless it is a case of misbranding. Possibly some condiment vendor at Jemdet Nasr was adulterating his spices. I hardly expect you to take this hypothesis seriously.

In a communication dated January 21, 1930, from Mr. O. F. Phillips, who is chairman of the Board of Review and Federal Grain Supervisor to the Bureau of Agricultural Economics of the United States Department of Agriculture in Chicago, he says:

Reference is made to your small bottle sample of grain taken from the ruins of Jemdet Nasr, near Kish, in March 1928, and which you recently submitted to us for identification.

This is without doubt the most difficult sample which you have submitted for identification from that period, due to the smallness of the kernels and their badly charred condition. In my examination of them under the microscope I am convinced that most of the kernels are some species of barley, although there appears to be some other seed present which I am unable to identify.

It would seem to me very plausible to suggest that the small room lying toward the northeast end of Jemdet Nasr was used by a grain merchant, since barley was found in one large jar and spices or their equivalent in a second jar. In the market (*suk*) at Hillah or any town in Iraq today, the grain merchants sell many varieties of seeds, the only difference being that the containers used are sacks instead of pottery vessels. Furthermore, this small room was found within fifty feet of the large bakery kilns standing in the largest room discovered at Jemdet Nasr.

These discoveries throw an interesting light on the early domestication of wheat and barley in the Kish area and proof is thereby established of the cultivation of cereals in Mesopotamia as far back as the beginning of the fourth millennium before the Christian era.

In conclusion I should like to thank the various experts who have contributed their valuable opinions to this paper.

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO, ILLINOIS

AN EXPLANATION OF A
TRICK PERFORMED BY
INDIAN JUGGLERS

By FRANCES DENSMORE

TWO classes of men treat the sick among Algonquian tribes,—doctors who administer herbs; and men who use magic and are commonly called jugglers. The former may be called a physical, and the latter a mental means of healing. That the two overlap in some cases is apart from our present consideration.

He who treats the sick by magic is in alliance with spirits and one phase of his work is the mysterious shaking of a little tipi constructed for the purpose. The juggler is tied with stout cords when placed in his little tipi and his first act is to free himself from this restraint, then he sings, pounds his drum and summons the spirits who are his advisors. The spirits make known their presence by a violent shaking of the tipi and by certain sounds which become familiar to those attending the performances but are understood only by the juggler. A spirit frequently summoned is the Great Turtle, said to make a whinnying sound. Hearing this sound, the people sitting outside the tipi may say, "We want the turtle to dance," and from within the tipi comes a sound like blunt sticks pounding on the ground. Then they say to one another, "The Great Turtle is dancing." The sounds seem to vary little through the years, as Parkman, in describing one of these séances, states that

A low, feeble sound, like the whine of a young puppy, was next heard . . . upon which the warriors . . . hailed it as the voice of the Great Turtle—the spirit who never lied ¹

A Menomini informant said he had heard that the juggler produced these sounds by means of a small whistle but other Menomini, less independent in opinion, repudiated the idea. Certain songs are sung by the juggler as the spirits arrive and depart. The friends of the sick person, seated outside the tipi, hear the performance, and after the spirits have gone away the juggler emerges to announce the result of the conference. Perhaps the sick person has failed to fulfil the obligations of a dream, perhaps someone has "bewitched" him, or perhaps he is suffering from some peculiar ailment for which the spirits have prescribed a remedy. Such performances were also held to determine the location of lost articles, animals, or persons.

A juggler's performance was usually held at night, was expensive and impressive, and held a controlling hand over the Indians for many genera-

¹ Francis Parkman, *The Conspiracy of Pontiac and the Indian War after the Conquest of Canada*, 2: 165-166 (Boston), 1908.

tions. Only a few men remain who can perform this trick and, with the progress of enlightenment, the Indians have ceased to desire it, though it remains in a few isolated corners of the Indian country, especially on the north shore of Lake Superior. Members of the white race living near these Indians occasionally attend the séances and say that they hear, in the tipi, the voices of friends living at a distance, or long dead, and that many animals of the forest come at the call of the juggler. This performance among the Chippewa is described by Hoffman, who states that it was encountered by the Jesuit Fathers early in the seventeenth century and formed one of their greatest obstacles in Christianizing the Indians.² Hoffman also describes it among the Menomini and quotes a description of a séance witnessed by the Reverend Peter Jones.³ The tipi figured by Hoffman is similar to a dwelling in construction, but much smaller and not so peaked at the top. The trick is mentioned by many early writers on the Indians but, so far as known, it has not been explained from the mechanical standpoint.

In July, 1930, the writer saw this trick at Grand Portage, Minnesota, an isolated Chippewa village on the north shore of Lake Superior, near the Canadian boundary. Although on friendly terms with the medicine-man, she was not invited to the séance and witnessed it by accident. The medicine-man was Sun-climbing-the-sky, whose magic power is held in high esteem by the Indians. He lives about 200 miles away but often comes to Grand Portage, and in the previous winter, according to report, he "made bad medicine" so effectively that it became necessary to send for another medicine-man to "straighten things out" and counteract his influence.

In the dusk of early evening the writer, accompanied by her sister, while crossing a meadow, was attracted by a strange sight in a grove of trees, about 300 feet away. A tall, slender tipi was swaying back and forth, though the air was still. Faintly came the sound of an Indian drum. Adjacent to the grove was a house where the juggler was visiting and had been seen, with his drum, less than half an hour before. No tipi was seen at that time, though the frame had probably been erected preparatory to putting on the cover. The situation was recognized at once as the famous shaking of a tipi. Standing still in the meadow, the writer and her sister watched the tipi sway with the regularity of a pendulum, back and forth, back and forth, moving exactly the same distance in each direction and stopping abruptly at each end of the arc. After continuing this for a few moments it stood motionless, a slender white figure in the shadow of the trees. Then it was

² Walter James Hoffman, *The Midewiwin or "Grand Medicine Society" of the Ojibwa*, BAE-R 7:251-252, 1891.

³ W. J. Hoffman, *The Menomini Indians*, BAE-R 14: 146-149, 1893.

shaken violently, seeming to be attacked by a convulsion. The covering at the top of the tipi streamed outward as though the structure might be blown to pieces. Then it stood still. A few Indians were moving quietly about, near the house and tipi. All around was the calm of early evening, and one felt that the strange behavior of the tipi must have been a matter of imagination. Suddenly the tipi began to move again, the top swaying back and forth, back and forth.

We moved to a place somewhat nearer, where our car was parked. The Indians were accustomed to seeing us with the car in this place, so our presence did not attract attention. There we listened and watched for a long time. The singing and drumming could be clearly heard, the songs resembling those of the Midewiwin (Grand Medicine) and the drum beats being rapid and evenly accented. The behavior of the tipi was the same that had been seen from the meadow. The only persons who passed by were a man and his little daughter, and we greeted them in the usual manner. They went on their way toward the grove and the vibrating tipi. The man had been ill for several weeks, and his illness was known to be a cause of anxiety.

A day or two afterward a doctor and nurse came from a town fifty miles away and visited the man, diagnosing his ailment as (apparently) typhoid fever and directing that he stay in bed. The same day a dance was held by the medicine-man at the sick man's house. A large number of Indians attended, the medicine-man sang, the people danced in a lodge like that of the Midewiwin, and the sick man's wife cooked food for the feast, using a huge kettle suspended over a fire. All this took place a few feet from the house where the sick man, obeying the doctor's orders, remained in his bed. The writer was invited to this dance and attended it, but did not mingle with the dancers. Many Indians, of all ages, were present. The singing and drumming, like that at the tipi-shaking, resembled the custom of the Midewiwin. This dance was designated by an Indian as a "beneficial dance." It may be added that about two weeks later the writer talked about the tipi-shaking with the medicine-man who said he had summoned the spirits to ask whether his treatment of the sick man would be a success. He said that if the spirits "spoke loud and clear" he knew that his treatment would be successful but "if their voices were weak the man would surely die." In reply to an inquiry he said the man was getting well. No other inquiry was made as to the man's condition, but there did not seem to be any further anxiety about him.

The day after the shaking of the tipi an opportunity occurred for inspecting the paraphernalia. The writer had an errand at the house where the medicine-man was visiting and asked permission to see the place where

the tipi stood. Consent was readily granted on condition that no photographs be taken. The poles of the tipi were eight in number and were laid on the ground beside the folded cover of dingy white cloth or canvas, while against a tree were leaning numerous hoops to which a large number of stout cords were attached. These were near the circle of holes in which the tipi poles had been planted, within this circle being pine branches which had been pressed down by the juggler's body. This circle appeared to be about 30 inches in diameter,—possibly three feet across. In the few moments at her disposal the writer observed chiefly the holes in which the tipi poles had stood. The edges of these holes were as clean as though pegs had been put in clay. The blades of grass around the edges were not disturbed nor the earth crumbled. A little stick was put down one of the holes and when measured was found to be more than a foot long. Courtesy did not permit a more detailed examination of the equipment.

Various items and comments drift toward a student who remains a considerable time in an Indian village, and it was learned that the juggler had used the equipment belonging to his host, who was himself a juggler and had given these demonstrations in the attic of a house, setting up his tipi there and shaking it in the approved manner. Two questions arose: If the frame of the tipi was shaken as violently as it appeared to be, why were the edges of the holes not disturbed? And how could such a structure be erected on a board floor?

As a possible explanation of this trick the writer suggests that the lower hoops may hold the poles in place after the manner of barrel hoops, and that the upper hoops may be larger than the circle of poles and manipulated by cords attached to the body of the juggler. These could be attached in such a manner that he could jerk them to one side or the other and continue to pound his drum. Although no measurements were taken, it appeared that some of the hoops were slightly larger than the circle of holes in the ground and it is always stated that the hoops were outside the poles. If the tipi cover were of proper texture and firmly fastened around the base of the framework, a jerking of the upper hoops would produce a violent agitation. The upper hoops could be attached to the poles by cords permitting them to hang loosely but not fall, while cords hanging down from the hoops could be attached to the juggler's body. The Indians stress the framework of poles, saying that such frames have been found in the woods and the poles were set so solidly that they could not be shaken. By the foregoing explanation there would be no need of shaking the poles as the agitation would be produced by the motion of the hoops beneath the cloth cover. For such a demonstration it would be important that the poles be solidly set, to with-

stand the jerking of the hoops against them. Great secrecy attended the erection of the tipi and, as stated, the demonstration seldom took place in the daytime.

Whatever may be the mechanical explanation of the tipi shaking, its greatest interest lies in the influence it exerted on the minds of the Indians, an influence affecting every phase of their lives.

RED WING, MINNESOTA

A UNIQUE PUEBLO II BIRD FETISH

B₃ KATHARINE BARTLETT

BIRDS have always played an important part in the lives of the Pueblo peoples from the earliest times. Some species were used for food and some were valued because of their feathers. In the story of ceramic development alone, one can read what a prominent place birds had in the minds of the Pueblo, for bird-shaped vessels and bird designs are to be found from Basket Maker III to modern Pueblo times in nearly every Southwestern ceramic area. Also small bird fetishes carved from stone and shell have been found in ruins of Pueblo III date or later, but the fetish here described antedates these and is otherwise a unique specimen.

In the summer of 1930 when the field expedition of the Museum of Northern Arizona was excavating small early Pueblo II sites north of the San Francisco peaks, the excavation of a small masonry granary was undertaken. When the rocks from the fallen walls had been removed, the appearance of the interior indicated that the place had been destroyed by fire. Indeed, the posts that supported the roof were so completely burned out that no wood material was left by which the granary can be dated. One small object remained undestroyed by the fire, for, on the floor, a small bird fetish of wood was found, entirely charred but fully preserved. (See fig. 1.)



FIG. 1. Two views of wood fetish from north of the San Francisco Peaks, Arizona. Pueblo II. Scale: 5 6.

On first sight the fetish looked like a beetle of rather Brobdingnagian proportions, perhaps because it was black, but, upon comparison with all known species of beetles of this region, it was found not to resemble any of them in the least.

The little fetish was made from a piece of wood, which may have been procured from a yellow pine splintered by lightning, as so many trees in

the region are today. The wood was carefully carved, probably with an obsidian knife, and delicately polished with a bit of fine-grained sandstone, for this was a work of art, deserving the greatest care. It measures 66 mm. in length from head to tail; 23 mm. in breadth at the shoulders, the widest portion, and 19 mm. at the head; the maximum thickness at about the center of the body is 12 mm.

Looking at the bird from above, one sees a somewhat triangular-shaped head in which there is a slit carved for a mouth, and two round depressions for eyes, in which bits of bright stone may have originally been set. Such stone was probably not turquoise, as none was found in the granary or other sites of the same period. The neck is clearly indicated by a groove. The body gradually tapers in width from the shoulders to the rounded tail. The wings are represented as folded closely against the body, with a groove down the center dividing them.

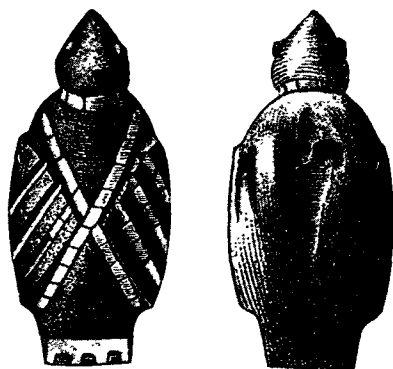


FIG. 2. Two views of inlaid hematite fetish from Pueblo Bonito.
Pueblo III. Scale: ca. 5/6. (After Pepper, fig. 50.)

Seen in profile, the head, body, and tail are clearly distinguished from each other, with the eye and mouth showing. The wings stand out in relief from the tail, which is about half the thickness of the body. The under side of the fetish is flat and from the mouth to the tip of the tail forms a beautiful even curve. One hole of the perforation on the under side is visible below the head.

On the under side the fetish is without relief, and is very carefully polished. Below the head close to the neck, two small holes have been bored down on the diagonal, meeting at the center, so that the bird could be suspended. If hung from a cord around a person's neck, the fetish hangs tail downward, perfectly balanced.

As far as I have been able to discover, only two similar fetishes are known. In his excavations at Pueblo Bonito, Chaco canyon, New Mexico, George H. Pepper discovered one of much the same aspect.¹ (See fig. 2.) To quote from his report:

In clearing away the débris in front of the human remains, a bird form of hematite was found. . . . It measures 58 mm. from tip of bill to tail, 27 mm. in width at the middle section of the wings, and 16 mm. in thickness at the thickest part which is directly back of the neck portion. The back is divided into two parts by bands of turquoise which have been sunk to the level of the surface. They start from either side of the neck, extend across the back and end at either side of the tail. These divisions serve to accentuate the wings which are over 1 mm. higher than the general surface. In each wing deep grooves have been cut and into these turquoise pieces have been inlaid. The turquoise lines extend to within 5 mm. of the edge and from this point a piece of shell extends to the edge. The tail is 15 mm. broad and a piece of shell 5 mm. wide has been attached to the end, the hematite having been cut away so that the shell would rest on the level of the stone. On the extreme edge of the shell, three turquoise pieces were inlaid. . . . The head had been carefully rounded and the front part pointed to form the beak. A groove encircles the neck and in this a series of turquoise sets have been inlaid. The eyes are 3 mm. in diameter and are made of half round pieces of turquoise which have been glued into holes drilled for the purpose. The under part is plain with the exception of two holes that have been drilled through the breast. The manner of drilling these holes and a peculiar concavity between them is shown in the drawing. The figure evidently represents a water bird at rest on the surface of a pond or stream. The wings are folded over the back and the head is thrown forward as though the bird were swimming.

From the position of the holes drilled in the breast, it would seem that this object has been suspended in some way and may have been used as a neck ornament in certain ceremonies.

The second similar bird fetish is a modern type used by the present day Zuñi. (See fig. 3.) Frank H. Cushing in his study of Zuñi fetishes² represents the various fetishes of the Eagle, God of the Upper Regions, and his various younger brothers of the other regions. He writes:

They are characterized merely by rude bird forms with wings either naturally or conventionally carved. Further details are rarely attempted, from the fact that all the other principal prey animals are quadrupeds, and the simple suggestion of the bird form is sufficient to identify the eagle among them. . . .

Plate VIII, Fig. 3, represents the fetish of the red Eagle of the southern skies. This is doubtless a nearly natural fragment of very fine grained red sandstone, the wings being indicated by deep lines which cross over the back, and the rump grooved

¹ George H. Pepper, Pueblo Bonito, AMNH-AP 27: 134, and fig. 50, 1920.

² Frank H. Cushing, Zuñi Fetiches, BAE-R 2: 29, and pl. 8, 1883.

to receive the cord with which to secure to the back an arrow point. The breast is perforated.

It is apparent that there are very striking similarities between these fetishes. They all represent a flattened bird form with the heads, necks, wings, and tails indicated in the same way and with a perforation on the under side for suspension. Comparing the three, we see that the heads of the Arizona and Zuñi specimens are rather crude and of similar shape, the one from Chaco canyon having a more pointed head. The Arizona and Chaco birds both have the eyes indicated, while the former is the only one showing a mouth. Each of the three has a distinct neck marked by a groove. The shape of the body of the Arizona specimen and of the one from Zuñi is rather long and slender, while that of the Bonito one is shorter and broader, perhaps because of the more ornamented wings. The wing shapes



FIG. 3. Red sandstone fetish from Zuñi Pueblo v. (After Cushing, pl. 8, fig. 3.)

vary slightly, being indicated by a straight groove in the northern Arizona specimen, by two curved lines in the Zuñi, and by two crossing turquoise bands in the Bonito. The first and the third have short rounded tails, while that of the second, though short, is square on the end. The difference in material is natural, for the Arizona bird comes from a heavily timbered region, and was made in Pueblo II times before turquoise was traded into this region. Perhaps what is now a little charred black bird may once have been painted the red color of the other two fetishes. The one from Pueblo Bonito is of hematite (red) inlaid with shell and turquoise, and from its association belonged to the Classical Pueblo period (Pueblo III) which reached its climax at Chaco canyon. The modern Zuñi specimen is of red sandstone, with no embellishments or details, simply suggesting the bird form, as Cushing says.

In spite of these minor differences, the three fetishes are of the same type—a type that has evidently persisted for over a thousand years of Pueblo history. It was present in early Pueblo II, as we know from the carved wood specimen found in a Pueblo II granary at the foot of the San Francisco peaks; it appeared in a more decorative form at Pueblo Bonito

(910–1130 A.D.—beam dates³) in Pueblo III; and some seven centuries later, in 1879–80 when Cushing was studying at Zuñi, he found the same type of fetish, representing one of the important Prey gods of the Hunt, playing an important rôle in the religious life of the people.

MUSEUM OF NORTHERN ARIZONA
FLAGSTAFF, ARIZONA

³ A. E. Douglass, The Secret of the Southwest Solved by Talkative Tree Rings, *National Geographic Magazine*. p. 743 ff., December, 1929.

IMPORTANCE OF ETHNOBOTANICAL INVESTIGATION

By MELVIN R. GILMORE

THERE is one division of ethnological investigation which has ever been sadly neglected. I refer to ethnobotanical inquiry and collection. It is strange indeed this neglect should have occurred, for the relation of a people, especially of a primitive people, to their floral environment is obviously fundamental to all their culture. This consideration is of the utmost importance for a clear understanding and a fair appraisal of economic conditions and of traits of material culture.

A primitive people lived well or ill according to the wealth or paucity of useful species of plants at their disposal. Primitive tribes, such as our Indians, depended immediately upon their floral environment first of all for food: not only for their vegetal food, which was a very considerable part of their fare, but also ultimately for such animal food as they had, for the animal life in any region depends, in both quantity and quality, upon the plant life.

Under such conditions of intimate dependence upon the vegetation of their habitat a people would naturally be induced to become acquainted with all the plants which grew about them, and which held so large a practical interest in their lives.

The first and most urgent demand of man, as of every other living creature, is for food. Besides food, man requires shelter and clothing against the inclemencies of the weather. He needs also a considerable variety of materials from the plant kingdom for the manufacture of implements, utensils, and other conveniences useful in the acquisition, transportation, storage, and preparation of the materials required for these prime necessities.

After these have been met, man has always and everywhere sought the satisfaction of esthetic desires. He requires ornament in clothing and embellishment of furnishing in habitation, objects pleasing to the eye in symmetry of form and color; he wants pleasing odor in clothing and in his abode, hence seeks perfumes: rythmical and melodic sounds are desired to please the ear or to compose the mind in religious rituals, so musical instruments are made. And for illness or injury, medicaments and instruments are required.

For the satisfaction of all these demands every tribe made a thorough exploration of the vegetal resources of their region and also imported from surprising distances useful vegetal products not indigenous in their own domain.

INTERPRETATION OF CULTURE TRAITS

The study of ethnobotany is of great importance for the aid it gives to a proper understanding of the interrelations of all the several traits and of the whole material and intellectual culture of a people in its entirety. Without the light afforded by ethnobotany an investigator may easily go far astray in interpreting his observations. I am reminded of the interpretation given by a very eminent anthropologist to a common saying which he heard current among the people of a certain Indian tribe, viz., that wild flowers should not be plucked because they contain the souls of little children. He regarded this as the statement of a peculiar tribal belief in regard to human souls. But to me it immediately suggested the teaching among all the tribes of my acquaintance upon the sanctity of all life, and specifically as to conservation of plant life. They were taught by their elders that wanton destruction is wicked. A precept which they frequently heard was: "Do not needlessly destroy the flowers on the prairies or in the woods. If the flowers be plucked then there will be no flower children (seeds); and if there be no flower children, then in time there will be no people of the flower nation (plant species). And if the flower nations should thus die out of the world, then the earth would be sad. All the flower people, and all the different nations of living things have their own proper place in the world, and without them the world would be incomplete and imperfect."

I think it was similar teaching that was heard by the anthropologist mentioned; because he knew nothing of the intimate relation of the people to their floral environment nor of their habits of thought with reference to vegetation, and because he was himself quite unaccustomed to think about plants, he entirely misconstrued the meaning of the saying quoted.

Ethnobotanical study not only prevents misapprehension and misrepresentation of observed facts, but is positively necessary in many instances to the correct diagnosis and explanation of ethnological facts, of the symbolism of objects used, and the significance of allusions in the text embodied in ceremonial ritual. When it is recorded that at a certain stage of a ceremony "a wisp of grass" was used in a certain manner we have no clue to the significance of the act for the celebrants nor even any certainty that it was grass, much less what species. It may have been actually not a grass but a sedge, or some other plant even more remote from the grasses. We need to know exactly the species used, for in any such case it was strictly prescribed for the given ritual, and nothing else would do, the given species having its symbolic meaning in the mind of the people.

So we cannot grasp the esoteric meaning of a ceremony in which plants are employed, unless we know certainly the species and the reaction of the

tribesman's mind to that particular species. For the Indian each species has its own proper function in the constitution and working of the world, hence, for example, different species are used as incense in different ceremonies, each incense being burned for a particular purpose. Ethnobotanical study gives us an illuminating line of evidence upon the ethnic psychology and the rationale of tribal rites and religious ceremonies.

AS A MEASURE OF CULTURE

The relations of a people to the indigenous vegetation and that of other regions near or farther away aids in measuring their cultural status and their contacts with other peoples. Thus we may gain knowledge of their agriculture, if agriculture was practiced, and much of the pattern of their customs and habits of life. We may learn of ancient commerce and commercial routes. By the evidence of ethnobotany we may determine the centers of domestication and the lines of distribution of cultivated species. We may obtain suggestions for additional uses of plants besides those now employed by our own people; we may also learn of useful qualities of other species not now cultivated, which might profitably be domesticated and improved by selective breeding and cultivation.

RELATION TO SYMBOLISM, CEREMONIALS, PHILOSOPHY, LINGUISTICS, HISTORY

But it is not only the tribal economic botany, interesting and useful as it may be, which we should seek. A proper ethnobotanical study of any people would include much more than this. We should make inquiry not only into the Indian economic botany, uses of plant products for food, and food accessories; manufacture of cordage and textiles; tools, implements, and utensils; habitations, furnishings and fixtures; perfumes, dyestuffs, and other uses; but we should make inquiry into the whole range of knowledge of plants and plant life. So fundamental to the aboriginal life of every tribe were their relations to plants, so complete was the ramification of these relations, that a competent consideration of ethnobotanical facts is essential to any fair and adequate presentation of every phase of ethnographic study.

Only by the inclusion of an ethnobotanical study of a people can we form a full and fair representation of their material and mental culture. Such study is necessary for an understanding of much of their folklore, their phenologic observations and the dating of seasonal industrial activities, and of festive and religious occasions; ritualistic forms and symbolism, allusions in myths and legends, their geographic place names, and new words

in vocabularies of languages changing gradually during the long course of migration into new regions. An example of this last category is offered by the origin of the Dakota word ti^npsi^na for the plant whose scientific name is *Psoralea esculenta*. This explanation of the etymology of the name ti^npsi^na was suggested by Dr. J. R. Walker, well known for his studies of the Dakota.

The Dakota name of wild rice (*Zizania aquatica*) is psi^n . The Dakota migrated from the region of the Great lakes, where wild rice abounds, into their present habitat in the high plains, where it is not found. But while they no longer had the highly prized psi^n , they here found a new and valuable food plant in the prairie region which in a large measure compensated for the loss of psi^n . This prairie plant, previously unknown to the Dakota, was *Psoralea esculenta*. The Dakota word for prairie is ti^nta^n . It appears that a name was then formed for the newly discovered plant by composition of the term for prairie with the term for wild rice and the termination na , which is common as the ending of many plant names; thus we have $ti^nta^n + psi^n + na$, ti^npsi^na , as the name of this plant new to their experience. This name represented at once to their minds the habitat of the new plant in contrast to that of psi^n , and also its value in their economy in replacing that plant, so highly prized, but no longer available to them.

It might not be thought that the findings of ethnobotanical inquiry would be necessary or even useful to linguistic studies, but the foregoing and the following instance will show that they may well be so. The very earliest flower to appear in spring on all the northern prairies is the blossom of the Pasque Flower, *Pulsatilla hirsutissima* (Pursh) Britton. The name of this flower in the Dakota language is $hokši-cekpa$ Wahca, which means "twin flower," $hokši-cekpa$ being the word for twin, and $wahca$ the word for flower. Why this flower should be called "twin flower" by the Dakota is not self-evident, but the explanation of the reason is an interesting fact in Dakota psychology and Dakota plant nomenclature as it is in Dakota linguistics. This flower is the first of all to bloom, appearing while the weather is still cold, and many times it is covered by the later snowfalls; but it comes through and shows its cheerful blossoms standing amid the snow. Because they are the first heralds of returning spring they are regarded with peculiar affection by all the people of the regions in which they abound, and their coming is eagerly expected. The Dakota liken the feeling which greets the appearance of these, the first-comers of spring flowers, to that feeling of fondness and glad expectancy which awaits the birth of the first-born child of a human family. So they call this first spring flower the "twin flower," linking it thus with the first-born child of a family.

The child and the flower are counted twins in the fond, yearning hope which awaits their coming.

SCOPE OF PRIMITIVE SCIENCE

It is not Indian economic botany only which we should seek. Though very interesting and useful, it is after all only a part of the science of botany. We should properly explore the whole scope of a people's knowledge of the science. We should learn what their naturalists know about plant anatomy, of the plant as a living organism, of the organs of plants and their functions. We should obtain their views of plant taxonomy and their methods in nomenclature. We should learn what they know of the relation of plants to their environment, their power of adaptation, and of association of species. We should also find out what they know of the distribution and range of species. Among agriculturists we should inquire into their knowledge of plant breeding and seed stock selection, of amelioration and acclimatization.

Thus adequate exploration of the ethnobotany of a tribe is in itself no slight task. But however much or little of such information is obtained, it is all helpful to other lines of anthropological investigation. In every archaeological exploration the greatest care should be exercised to preserve every trace of vegetal remains, whether carbonized or in exsiccated condition. From such vegetal remains we may obtain important evidence in regard to the distribution of species in prehistoric time, and of their former uses and of degrees of advancement in technique. Also, in the case of cultivated plants, we should thus find the evidence of lines of distribution of crop species and of the stages of advancement in the improvement of such species. We might also learn much concerning routes of travel and commerce, and of the commodities exchanged.

BOTANICAL OBSERVATION IN CONNECTION WITH PURSUIT OF OTHER LINES OF INVESTIGATION

It is not to be desired that an investigator of other special ethnological topics should turn aside to make inquiry in regard to Indian botany like one who is botanically trained. But every field worker should be alert to the possibilities of tribal plant lore impinging upon his own special field on every side; to sense these correlations when they exist; to follow their lead and to take advantage of them to the enrichment of his own study. The most favorable arrangement would be that of cooperation of the workers in several lines of ethnological investigation, each profiting by the stimulus and extended horizon afforded by the views of each other. The point of view

and inquiries of the botanist would bring out additional facts and discover new implications of phenomena already observed, which otherwise would never appear.

METHODS

Every investigator who comes upon any reference to a plant or vegetal product should note it and have the species identified. He should not fail to record carefully the native name of the plant and should secure an identifiable sample for record. This specimen should be certainly identified by the Indian informant and later by a systematic botanist. For example, if the investigator is inquiring about basketry or matting or cordage he should obtain as a part of his record botanically identifiable specimens of the plants used in these manufactures. If dyes are used for decorative designs on these fabrics the sources of the dyes should be ascertained and specimens obtained of the plants furnishing the dyestuffs.

If an item is learned on the use of certain seeds for making beads, or on the use of perfumes for the hair or clothing, or symbolic objects used in religious ritual, then the identification of the plant from which these products are obtained should be made sure by securing specimens of the plants themselves.

The student should bear in mind that actual observation, fully and carefully recorded, accompanied by specimens indentified by the Indian informant, is worth more than any hearsay or second-hand information. Such data are of permanent and inestimable value in many and often unexpected ways.

The field worker not acquainted with botanical aims and technique will desire some instruction as to materials to be secured, and methods for their preservation, together with the items of information to be sought. In the first place he needs to know how herbarium specimens are prepared and preserved. The standard size of mounting sheets is $11\frac{1}{2}$ by $16\frac{1}{2}$ inches, so all dried specimens of plants should be within this size limit. If the specimen be larger it may be bent while still flexible, before it becomes stiff and fragile by drying. In the case of trees and shrubs, branches representative of the whole plant may be used.

An herbarium specimen should consist of all characteristic parts of a plant, not only those above ground, such as buds, leaves, flowers and fruits, but also underground parts, such as roots, rootstocks, and tubers, or other distinguishing parts. Usually a single specimen could not be made to show all these parts, but two or more specimens collected at different times might well be secured.

PREPARATION OF SPECIMENS FOR HERBARIUM

Each specimen should be laid out flat with leaves and flowers extended between sheets of absorbent paper, one above another on a board of other flat surface. There should be another board laid over all, and by a weight, by buckled straps or tied cords, pressure should be applied sufficient to prevent leaves or flowers from wrinkling in drying, but not so great as to crush any tender parts. For the sheets one may use blotting paper, carpet paper, or even old newspapers folded flat and smooth. The drying papers should be changed every day until the specimens are completely cured.

SPECIMENS OF PLANT PRODUCTS

Besides herbarium specimens for identification of the species it is desirable also to collect specimens showing Indian utilization of the plant. For this purpose samples of raw materials should be prepared, showing the stages of preparation through which they pass, and also specimens of the finished product. Various receptacles may be used, suited to the nature of the materials; they may be tough paper bags or boxes, muslin bags, glass jars and phials, and tin boxes or cans. Each specimen should be carefully and securely labeled, numbers corresponding to chronologic order in collecting. These numbers should be entered upon data sheets or in a notebook. With each number on the data sheets should be entered full information concerning the specimen which is marked with the corresponding number. The data sheets may be made in some such order as follows:

- | | |
|--|---|
| 1. Number. | made from this plant. |
| 2. Blank space for insertion of botanical name when determined. | 7. Name of tribe from which the information was obtained. |
| 3. Blank for name of botanist who identified the specimen. | 8. Name of Indian informant. |
| 4. Common or popular English name of the plant. | 9. Uses of the plant. |
| 5. Name in language of the tribe and etymological analysis of this name. | 10. Parts used. |
| 6. Tribal name of any product | 11. Place where information was obtained. |
| | 12. Date of collecting. |
| | 13. Name of collector. |
| | 14. Remarks. |

DISCRIMINATION AND CAREFUL SIFTING OF INFORMATION

Under the head of "Remarks," very full and detailed description may be given, the fuller the better, and all these details should be entered at the time the observation is made or the information obtained, and never left

to memory for later entry. Moreover, the statements should be thoroughly verified at the time by review with the informant in all particulars.

If any plants not indigenous to North America are noted as used by Indians, it should be stated that their use has probably been learned from the white people. It is very confusing to the reader if plants introduced from Europe that have escaped and become naturalized in America are listed without discrimination among indigenous plants. Unqualified statements that such plants were used by Indians are quite misleading. In a proper ethnological study of any tribe we should learn distinctly what items were comprised in the aboriginal culture, and what were borrowed from other sources.

DISTINCTION BETWEEN INDIGENOUS AND INTRODUCED PLANTS

I make particular mention of this point because of certain papers published under titles such as "The Ethnobotany of the . . . Indians." In these papers a considerable number of plants introduced from Europe have been listed as having Indian uses, with no intimation that they are not indigenous and so of course could not have been used by the Indians before the coming of the white men. In these lists are included burdock, catnep, coltsfoot, camomile, dandelion, ground ivy, lamb's-quarters, mullein, mustard, peppermint, shepherd's purse, velvet weed, wild parsnip, and other plants introduced from Europe and naturalized here, and the inference is left that they are native. Uses of these foreign plants by Indians are told just as aboriginal uses of indigenous plants are told, leaving the reader in ignorance of the mixture of European acculturation elements along with the elements of aboriginal culture. Such confusion is deplorable.

ETYMOLOGY OF INDIAN PLANT NAMES

Careful record should be made of the etymological analysis of the names of plants and of botanical terminology in the language of the tribe studied. Reference has been made already to the importance of this rule. Such etymological evidence may disclose significant facts not otherwise discoverable.

It is hoped that this discussion may be in some degree helpful to all ethnological field workers. It is offered with the purpose of suggesting a means of acquiring a more ample and adequate body of information in the cultural study of any tribe, an additional aid toward a clearer and more definitive exposition of tribal culture, and further security against error and misinterpretation of observed actions and appearances.

UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

REPORTS

PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR THE YEAR ENDING DECEMBER, 1931

The American Anthropological Association held its thirtieth annual meeting at Phillips Academy, Andover, Massachusetts, on December 28-29, 1931, in conjunction with the American Folk-Lore Society.

COUNCIL MEETING, DEC. 28, 4:30 P.M.

President G. G. MacCurdy in the chair. The minutes of the Cleveland meeting, 1930, were not read, but were approved as printed in the *American Anthropologist*, vol. 33, no. 2.

REPORT OF SECRETARY

There has been no meeting of the Executive Committee during the year. Its business has been transacted by letter and wire.

The Pacific Section of the American Anthropological Association met with Section H of the American Association for the Advancement of Science at Pasadena and Los Angeles, California, June 15-20, 1931. Mr. M. R. Harrington was in charge of local arrangements. Meetings were held at the Southwest Museum.

The President appointed the following committees and representatives during the year:

Nominating Committee: Drs. E. A. Hooton (Chairman), F. G. Speck, M. W. Stirling.

Program Committee: Drs. E. Sapir (Chairman), F. W. Hodge, N. C. Nelson.
Representatives to the National Research Council:

Drs. E. Sapir and F. G. Speck, in place of the two ineligible representatives nominated at the 1930 annual meeting of the Association.

Mr. Neil M. Judd, to fill the unexpired term of Dr. G. A. Dorsey, deceased.
Delegate to the Second International Congress of Linguists, Geneva, August 25-29, 1931: Prof. Franz Boas.

The membership of the Association, as of December 1, 1931 is as follows:

Number of members		971
Honorary . . .	1	
Life . . .	11	
Regular	959	
Resigned during 1931		33
Deceased " " .		13
Dropped " " .		<u>10</u> 56
Admitted.		82

The Association has lost by death during the year thirteen members: Robert Burket, George A. Dorsey, Coleman du Pont, Charles J. Dunlap, Edwin Ertsgaard,

George M. Kober, Alfred P. Maudslay, Dwight W. Morrow, Max. L. Rosenberg, George W. Stewart, B. Tavera Acosta, Herman F. C. ten Kate, Karl von den Steinen.

The secretary attended the Seventh Annual Conference of the Secretaries of the Constituent Societies of the American Council of Learned Societies, in New York City, January 29, 1931.

Respectfully submitted,
JOHN M. COOPER,
Secretary

It was voted that the Secretary's report be accepted.

REPORT OF TREASURER

REGULAR FUND

Receipts

Balance on hand December 1, 1930 (exclusive of Index Fund)			\$2,516 96
Membership dues			
American Ethnological Society	\$	646.50	
Anthropological Society of Washington		255.00	
Central States Branch		297.00	
American Anthropological Association			
1929	\$	12.00	
1930		170.90	
1931		3,554.42	
1932		182.60	
		<hr/>	
		3,919.92	5,118 42
Sale of publications.	\$	729.21	
Reimbursements		239.88	
Interest		120.00	
Royalty Memoirs Fund		33.00	
		<hr/>	
			1,122 09
			<hr/>
			\$8,757 47

Disbursements

American Anthropologist:		
George Banta Publishing Company and		
Oakland National Engraving Company		
Printing	\$2,971.69	
Illustrations	631.77	
Distribution	206.15	
Storage, insurance	68.50	
Reprints	392.81	\$4,270.92
	<hr/>	
Editor's expenses	655.68	

Treasurer's expenses

Salary	\$ 356.25	
Office	93.57	
Membership	74.10	523.92

Secretary's expenses

99.57

Out-of-print publications 181.31 \$5,731.40

Cash on hand, November 30, 1931 . . 3,026.07 \$8,757.47

Resources

Cash on hand, November 30, 1931 \$3,026.07

Due from sales, 1930 . . \$ 161.20
1931 11.80 \$173.00

Due from dues:

1930

American Anthropological Association \$ 12.00 12.00

1931

American Anthropological Association \$ 340.80

American Ethnological Society 90.00

Central States Branch, . . 135.00 565.80

Due from reimbursements 19.36 770.16

\$3,796.23

Liabilities

Membership dues for 1932-33 already paid \$ 197.60

Net excess resources over liabilities 3,598.63 \$3,796.23

PERMANENT FUND

Receipts

Balance, December 1, 1930 . \$3,035.93

Interest on Savings Account, Jan. 1, 1931 \$ 59.92

Interest on Liberty Bonds, April, 1931 6.36

Interest on Savings Account, July 1, 1931 56.64

Interest on Liberty Bonds, Oct., 1931 6.39 129.31

\$3,165.24

Investments

Liberty Bonds (three) . \$ 291.09

Cash in Savings Account . 2,874.15 \$3,165.24

INDEX FUND

Balance, December 1, 1930	\$1,007 21	
Interest	40.14	\$1,047 35

EXPENDITURES AGAINST 1931 BUDGET

	<i>Allowance</i>	<i>Spent*</i>	<i>Balance</i>
Secretary's expenses	\$ 100 00	\$ 92 87	\$ 7 13
Editor's expenses	720 00		
Editor's assistant		593 75	
Office expenses		61 93	
		655.68	64.32
Treasurer's expenses	680 00		
Treasurer's assistant		356.25	
Office expenses		95 57	
Membership expenses		74.10	
		523 92	156 08
Membership campaign (Archaeological Institute of America)	150 00		150.00
American Anthropologist	\$4,424.42		
Balance due on No. 4 of 1930	104 42	104 42	
Printing	3,150.00	2,854 89	295.11
Illustrations	500 00	494.66	5.34
Reprints	400.00	309.12	90 88
Distribution	200.00	206 15	—6 15
Storage, insurance on back numbers	70 00	68 50	1.50
		4,037.74	386.68
Out of print publications	300 00		
Purchase	100.00	3.00	97 00
Photostat reproductions	200.00	178 31	21.69
		181.31	118 69
Totals	\$6,374 42	\$5,491.52	\$ 882.90

* This column lists net expenditures (i.e., gross expenditures less reimbursements).

REGULAR RECURRENT INCOME AND EXPENDITURES

Income

	1928	1929	1930	1931
Memb. dues from affili. soc. at \$5	\$1,145 50	\$1,166.00	\$1,653 50	\$1,198.50

Memb. dues collected directly at

\$6 (less subscr. commissions)	3,664.05	4,000.22	3,756.84	3,919.92
Total dues...	4,809.55	5,166.22	5,410.34	5,118.42
Sales of publications	843.00	535.15	533.42	729.21
Interest and royalty.....	131.50	148.50	153.00	153.00
Total.....	\$5,784.05	\$5,849.87	\$6,096.76	\$6,000.63

*Expenditures*American Anthropologist, printing
and illustrations:

No. 4 of preceding year (part)			634.09	104.42
Nos. 1-3 of year	\$2,378.34	\$2,918.41	\$2,904.11	
No. 4 of year, part		646.32	538.84	
No. 4 of year, whole	759.88			
No. 1 of next year.	125.24		65.90	
Nos. 1-4 of year				3,349.55
Total	\$3,263.46	\$3,564.73	\$4,142.84	\$3,453.97
Anthropologist and Memoirs (distrib., storage, insur., net cost gratis reprints)	455.36	521.79	507.29	583.77
Memoirs: Print. and ill. paid by Assoc.....	61.85		539.72	
Total account, publ.	3,780.67	4,086.52	5,189.95	4,037.74
Sec'y, Treas. and Ed's. offices..	1,344.41	1,187.07	1,141.74	1,272.47
Reprinting and purch. out-of-print publications	92.27	79.90	118.28	181.31
Total..	\$5,217.35	\$5,353.49	\$6,459.97	\$5,491.52
Surplus carried over	\$ 566.70	\$ 496.38		509.11
Deficit.....			\$ 363.21	

During 1931 bank balances of the three funds of the Association increased as follows:

Regular fund from	\$2516.96 to \$3026.07
Permanent fund from	\$2744.84 to \$2874.15
Index fund from	\$1007.21 to \$1047.35

This makes a total of \$6947.57, of which \$6921.50 is in a savings account (Bank of America), drawing four per cent interest.

Upon consultation with Professor Kroeber it was deemed inadvisable to attempt the membership campaign among the members of the Archaeological Institute of America. The Treasurer's assistant, however, devoted 45 hours to a general member-

ship campaign. Two hundred and twenty-six form letters were mailed, which resulted in the addition of 19 new members.

In view of the Association's financial condition and in conformity with the recommendation in the appendix to the report of the auditing committee (published in *American Anthropologist*, 1931, page 459), it is urged that the 1932 budget appropriation should not exceed \$6000.

Respectfully submitted,

E. W. GIFFORD,

Treasurer

It was voted that the Treasurer's report be accepted.

The President appointed the following Auditing Committee: Drs. A. L. Kroeber, and R. Olson.

It was voted that the four recommendations made in the report of the Auditing Committee for 1930 (*American Anthropologist* 1931, 33: 459) be binding on the Budget Committee in its recommendations and on the Treasurer. It was further voted that the Executive Committee of the American Anthropological Association serve as Budget Committee and that it report to the Association at the annual meeting, December 29, 1931.

REPORT OF EDITOR

The fourth issue of Volume 33 was distributed about two months before the close of the year. In consonance with the economy programme outlined by last year's Auditing Committee, the *American Anthropologist* for 1931 was limited to 670 pages as against 717 in 1930. As a result of this policy all printer's charges have been defrayed for the year, while in the two preceding years a residual indebtedness had to be reported. The Treasurer recently attempted to secure a lower rate from the George Banta Publishing Company, but without striking results. The manager, Mr. Peerenboom, explained that owing to local conditions the policy of his firm has not been identical with that of most printing houses. While some of the latter may offer lower prices now, they are likely to restore higher rates as soon as business conditions become normal, so that in the long run the Banta prices, maintained since 1922, will average better. Mr. Peerenboom recognizes, however, that the Association is entitled to its share in the reduction in cost of paper and will make corresponding allowances in the invoices.

One memoir (Leslie White, *The Pueblo of San Felipe*) is being financed by Dr. Elsie Clews Parsons. The galley proofs of the *Anthropologist*, no. 1, 1932, were returned for paging early in December.

The Memoir situation remains thoroughly unsatisfactory as more and more lengthy papers of genuine merit keep pouring in. The Editor has made a plea for a subsidy to a special committee of the National Academy of Sciences, but as yet has had no reply.

Volume 27, Number 1, which was out of print, was reproduced by the Beha photostatic process. If the Council approves the budget recommendation for con-

tinuing the reproduction of out-of-print numbers, we shall gradually build up a complete stock of our publications.

Though the appointment of associate editors seems to be discretionary with the Editor, in the absence of constitutional provisions for their election, the Editor would like to have official sanction, whether explicitly or by tacit consent, for the addition of an associate editor. The number of strictly archaeological contributions offered to the *Anthropologist* is considerable and it seems highly desirable, especially in view of continued congestion of material, that a specialist in archaeology should regularly pass on their value. The Editor accordingly suggests, irrespective of whether he himself is re-elected, that Dr. Frank H. H. Roberts, Jr., of the Bureau of American Ethnology, who has expressed his willingness, be asked to serve as associate editor in charge of archaeological contributions.

Finally, the Editor once more expresses his appreciation of Associate Editor Gifford's invaluable services during the Editor's inevitably prolonged absence from Berkeley.

Respectfully submitted,
ROBERT H. LOWIE,
Editor

It was voted that the Editor's report be accepted. It was further voted that Dr Frank H. H. Roberts, Jr., be elected an associate editor.

It was voted:

That the invitation of the International Congress of Prehistoric and Proto-historic Sciences to the American Anthropological Association to cooperate in the nomination of two members of the Permanent Council and two National Secretaries to represent the United States of America in the Congress be referred to the President and Secretary with power to act.

That the President appoint a committee of the American Anthropological Association on research.

That the Council recommend that the 1932 annual meeting of the American Anthropological Association be held at Atlantic City, and that the 1933 meeting be held, in accordance with the invitation of Dr. Shetrone, at Columbus, Ohio.

The President appointed the following Committee on Resolutions: Drs. Wissler, Lowie, and Mason

ANNUAL MEETING, DECEMBER 29, 2.00 P.M.

The following officers, Council members, representatives to councils and associations, and new members of the American Anthropological Association* were submitted by the Nominating Committee (Drs. Hooton, Speck, Stirling, Linton) and were elected:

* The names of the new members will be published in the complete membership list of the Association in our next issue.

<i>President</i>	John R. Swanton
<i>First Vice-President</i>	Warren King Moorehead
<i>Second Vice-President</i>	Wilson D. Wallis
<i>Secretary</i>	John M. Cooper
<i>Treasurer</i>	Edward W. Gifford
<i>Editor</i>	Robert H. Lowie
<i>Associate Editors</i>	Edward W. Gifford, Frank G. Speck, Frank H. H. Roberts, Jr.
<i>Executive Committee</i>	H. Irving Hallowell, H. Newell Wardle, Matthew W. Stirling.

Council

- New Members:* Harriett M. Allyn, Manuel Andrade, R. F. Barton, Wendell C. Bennett, Biren Bonnerjea, Charles Brown, Peter H. Buck, Douglas Byers, Emile Cailliet, William H. Claflin, W. B. Cline, C. H. Danforth, Ellsworth Faris, Reo Fortune, Lawrence Foster, E. A. Golomshtok, E. F. Greenman, W. D. Hambly, M. R. Harrington, L. Havemeyer, J. N. B. Hewitt, E. B. Howard, Charles R. Keyes, Berthold Laufer, Charles T. Loram, R. H. Lowie, Paul S. Martin, Robert McKennan, George P. Murdock, Paul H. Nesbitt, W. F. Ogburn, Frans M. Olbrechts, A. T. Olmstead, Henry B. Roberts, Carl Ruppert, J. T. Russell, Jr., Max Schrabisch, A. H. Schultz, D. Scott, Frank M. Setzler, William D. Strong, J. Eric Thompson, W. J. Wintemberg, George Woodbury (1935).
- H. Bingham, L. Bloomfield, R. Bunzel, C. B. Cosgrove, D. S. Davidson, H. Field, E. W. Gifford, C. H. Hawes, M. Jacobs, D. Jenness, T. F. McIlwraith, J. A. Mason, M. Mead, C. B. Moore, W. K. Moorehead, N. C. Nelson, E. C. Parsons, E. K. Putnam, O. Ricketson, E. Sapir, M. H. Saville, H. I. Smith, G. C. Vailant, H. Webster, A. E. White, L. A. White, C. C. Willoughby (1935).
- C. Amsden, H. Beyer, P. A. Brannon, J. H. Breasted, K. M. Chapman, F. E. Clements, H. S. Colton, J. M. Cooper, T. Deuel, K. P. Emory, G. Engerrand, Lucy Freeland, Anna H. Gayton, M. R. Gilmore, H. S. Gladwin, Charlotte D. Gower, W. K. Gregory, S. J. Guernsey, C. E. Guthe, H. U. Hall, E. S. Handy, L. L. Hargrave, J. P. Harrington, C. L. Hay, M. Hellman, L. W. Jenkins, J. H. Kellogg, Isabel T. Kelly, A. V. Kidder, O. LaFarge, A. Lesser, E. M. Loeb, W. C. MacLeod, T. Michelson, E. H. Morris, C. B. Osgood, H. Powdermaker, W. A. Ritchie, F. H. H. Roberts, Jr., L. Schellbach, H. C. Shetrone, V. Stefansson, J. B. Stetson, Jr., T. W. Todd, W. L. Warner, G. Weltish, G. D. Williams, F. R. Wulsin (1934).
- R. B. Bean, Fay-Cooper Cole, H. B. Collins, Jr., B. Cummings, F. Densmore, A. C. L. Donohugh, S. Hagar, G. G. Heye, W. B. Hinsdale, E. A. Hooton, H. Kelley, H. W. Krieger, W. M. Krogman, S. K. Lothrop, R. C. Mackaye, W. C. McKern, Z. Nuttall, R. L. Olson, J. E. Pearce, R. Redfield, E. B. Renaud, H. L. Shapiro, F. G. Speck, L. Spier, Ellen Spinden, H. J. Spinden, F. Starr, J. R. Swanton, Ruth Sawtell Wallis, W. D. Wallis, H. N. Wardle (1933).

Margaret Ashley, S. A. Barrett, M. W. Beckwith, R. F. Benedict, C. W. Bishop, F. Blom, C. S. Coon, C. B. Davenport, V. J. Fewkes, E. S. Goldfrank, E. F. Greenman, G. B. Grinnell, E. Gunther, A. I. Hallowell, M. J. Herskovits, A. E. Jenks, N. M. Judd, R. Linton, J. C. McGregor, B. Oetteking, A. C. Parker, V. Petrullo, G. Reichard, Helen M. Roberts, J. H. Steward, M. W. Stirling, R. J. Terry (1932).

Past Presidents (ipso facto members of the Council): F. Boas, W. H. Holmes, R. B. Dixon, F. W. Hodge, A. L. Kroeber, C. Wissler, W. Hough, A. Hrdlicka, M. H. Saville, A. M. Tozzer, G. G. MacCurdy.

Representatives to Social Science Research Council: (In order to conform to the plan of the S.S.R.C. it is proposed to extend the term of each of our representatives so that tenure of office will cease December 31 instead of March 31): R. Linton (April 1, 1932) to December 31, 1932; A. M. Tozzer (April 1, 1933) to December 31, 1933; E. Sapir (April 1, 1934) to December 31, 1934.

Representatives to National Research Council: Clark Wissler, J. M. Cooper.

Representatives to Section H., A.A.A.S.: A. Hrdlička, T. W. Todd.

Representatives to American Council of Learned Societies: (In order to conform to the practice of electing representatives whose offices terminate in even years): A. V. Kidder (1931) to hold office until end of 1932; F. Boas (1933) to hold office until end of 1934; R. H. Lowie, alternate.

The Budget Committee, following the recommendations passed at the Council meeting of December 28, 1931, presented the following budget recommendations for 1932:

1. Secretary's expenses.	\$ 100
2. Editor's expenses.	600
Editor's assistant.	\$ 480
Office expenses	120
3. Treasurer's expenses.	540
Treasurer's assistant.	\$ 360
Office expenses.	100
Membership charges	80
4. <i>American Anthropologist</i> .	4,460
Printing	\$3,150
Illustrations.	640
Reprints.	400
Distribution.	200
Storage of back numbers	60
Insurance on stored publications.	10
5. Out-of-print publications.	300
Purchase.	\$ 100
Photostat reproductions.	200
Total.	<hr/> \$6,000

It was voted that the budget as submitted by the Committee be accepted.

The following resolutions presented by the Resolutions Committee were adopted:

1

Resolved that the American Anthropological Association, in session at Andover, Massachusetts, December 28 and 29, 1931, express to the officers of Phillips Academy of Andover, and especially to Mr. Warren K. Moorehead, its sincere appreciation for the kind hospitality extended to the Association during this meeting.

2

Whereas Doctor George A. Dorsey was one of the founders and for many years an active member of the American Anthropological Association; whereas he took a prominent part in the organization of museums and in field research and himself contributed to ethnographic knowledge, especially of the Plains Indians; be it resolved that the American Anthropological Association give this expression of sorrow over his untimely death and extend to Mrs. Dorsey this message of sympathy.

3

Resolved that the American Anthropological Association, in session at Andover, Massachusetts, December 28 and 29, 1931, express to Dr. Franz Boas its sincere sympathy in his present illness and its hopes for his prompt recovery.

It was voted that the 1932 annual meeting of the Association be held at Atlantic City and that the 1933 meeting be held at Columbus Ohio. It was further voted that as regards the participation of the American Anthropological Association in the summer meeting or meetings in Chicago, 1933, the matter be referred to the Executive Committee with power to act.

PROGRAMME

MONDAY, DECEMBER 28TH

9:30 A.M.

- FREDERICA DE LAGUNA, Archaeological exploration on Cook Inlet, Alaska
WM. DUNCAN STRONG, Recent archaeological research in Nebraska (Lantern)
HAROLD S. COLTON, How a volcanic eruption influenced the lives of an ancient Pueblo people (Lantern)
LYNDON L. HARGRAVE, Some results of study of Pueblo II in the San Francisco Mountain region, Arizona (Lantern)
CHARLES T. LORAM, An experiment in acculturation
BARBARA AITKEN, Two Indian accounts of the trouble at Oraibi in 1905-1906 (read by title)
LESLIE A. WHITE, The Pueblo of Sia, New Mexico
J. ALDEN MASON, Lintel 3 from Piedras Negras (Lantern)

LINTON SATTERTHWAITE, JR., The Eldridge R. Johnson Expedition of the Museum of the University of Pennsylvania to Piedras Negras

2:00 P.M.

ROBERT H. LOWIE, The prose style of the Crow Indians

RUTH M. UNDERHILL, Literary aspects of Papago songs

ALBERT MUNTSCHE, Notes on the language and folklore of the Caribs of British Honduras

RICHARD THURNWALD, Some African institutions in process of change

GEORGE P. JACKSON, Old hymns hidden in Negro spirituals

ZORA NEALE HURSTON, African survivals in America (dance and religion)

GLADYS A. REICHARD, Some phases of art in Melanesia (Lantern)

DEAN S. FANSIER, Objectives in folk-lore research

6:30 P.M.

Annual Dinner of the AAA and AFLS

8:00 P.M.

VINCENT PLTRULLO, In search of the primitive in Matto Grosso, Brazil: A motion picture cross-section of archeological and ethnological field studies conducted during 1931 under the auspices of the Museum of the University of Pennsylvania cooperating with the Matto Grosso Expedition

TUESDAY, DECEMBER 29TH

9:00 A.M.

EDWIN D. HARVEY, Shamanism in ancient and modern China

JOHN M. COOPLER, The Northern Athapaskan-Algonquian culture area

CORNELIUS B. OSGOOD, The culture of the Tanaina of Cook's Inlet, Alaska

H. SCUDDER MEKFELE, Teton-Dakota acculturation

EARL H. BELL, The results of an ethnographic approach to the study of changing family situations in a small Middle West community

ROLAND B. DIXON, Polynesian and American culture contacts

ALFRED M. TOZZLER, Biology and biography

HELEN H. ROBERTS, Musical form in the songs of some Southern California Indians

GENE WELTFISH, Pima art style

2:00 P.M.

WARREN K. MOORHEAD, An account of some experiments in the practical use of eoliths and Chellean tools

FORREST E. CLEMENTS, Some general aspects of the statistical method in ethnography

URSULA MCCONNELL, Recent research among some tribes of northeastern Australia (Lantern)

TRUMAN MICHELSON, Report on season's field-work

ALEXANDER LESSER, Cultural significance of the Ghost Dance

HORTENSE POWDERMAKER, Individualism in a Melanesian Society

AGNES C. L. DONOHUGH, (a) Ovimbundu leaf messages; (b) Examples of Angola folklore

FRANK G. SPECK, Notes on identities of Siouan tribal names in the Southeast (read by title)

7:30 P.M.

F. R. WULSIN, Excavations at Tureng Tepe, near Astarabad, Persia (read by title)

THEODORE McCOWN, New discoveries in caves near Athlit, Palestine (Lantern)

VLADIMIR J. FEWKES, Harvard-Pennsylvania expedition to Yugoslavia (Lantern)

R. W. EHRLICH, Pennsylvania-Harvard excavations in Czecho-Slovakia, season 1931 (Lantern)

BENJAMIN L. WHORF, Possible phonetic values of certain characters in Maya writing (Lantern)

JOHN M. COOPER, Secretary,

American Anthropological Association

BOOK REVIEWS

METHODS AND PRINCIPLES

The Age of the Gods. CHRISTOPHER DAWSON. (Houghton Mifflin Co., 1928. xx, 426 pp., 5 tables.)

This book attempts a picture of the growth of civilization in the Old World from Palaeolithic down to Classical times. It is, however, neither a text book nor a popular sketch. Concentrating attention on the fundamental developments in material culture and social life throughout this vast period, Dawson attempts to synthesize the religious attitudes characteristic of the major phases. That this task is apparently the real objective of the book is indicated by the title, but the subject is not approached abstractly. A clear and well balanced account of the prehistoric cultures of Europe and the Ancient East is attempted throughout, and the author is to be congratulated on his skilful and conscientious use of the archaeological material. Artifacts characteristic of different periods and regions, from laurel leaf blades and shoe-last celts to bell beakers and types of fibulae, are carefully described as occasion arises, so that the uninitiated reader is not, as so often, mystified by an allusive technology, and while the book is probably not intended as an introductory text book, it affords a good introduction to the early civilizations of the Old World. The discussion of religious life and spiritual culture is allowed to develop from direct consideration of the archaeological evidence, and while the religious emphasis has influenced the selection of material—a great deal of space is, for example, devoted to the religious organization of the Sumerian city states, and relatively little is said about the development of their arts and crafts—such topics as the growth of specialist crafts and the widening range of trade in the ancient world are adequately treated. In his discussion of warfare and the rise of warrior groups he makes considerable use of Perry's little known papers in the *Proceedings of the Manchester Literary and Philosophical Society*, 1917 and 1918.

Many points in the general thesis are open to criticism; the correlation of divinity types with various economies is probably too sweeping. The sky god as a product of hunter and pastoralist societies in contrast to the earth mother of the peasantry, fits ill with the suggestions of a female goddess cult in Palaeolithic times which Mr. Dawson himself emphasizes. The analysis of the fundamental social and religious elements in the theocratic "temple states" is suggestive and illuminating, but there is scarcely adequate ground for assuming it to be an almost inevitable development from the peasant cultures. One may in many areas more readily maintain that the peasant cultures were the products of diffusion into the outer world of the fundamental arts, crafts, and social ideas of the early cities of Babylonia, Egypt, and the Eastern Mediterranean.

Finally one regrets that the common ignorance or oversight of the true complexities of "simple cultures" could lead Mr. Dawson to append to his generalization that "the great stages of world culture are linked with changes in man's vision

of Reality" (page xx), the further comment, "The primitive condition of food-gathering and hunting peoples does not necessarily imply reasonable purpose or any reflective vision of Reality: consequently it does not imply civilization. The dawn of time civilization came only with the discovery of natural laws, or rather of the possibility of man's fruitful cooperation with the powers of nature as exemplified in agriculture." Would he really hold that the leaching of acorns in California, or the preparation of ipoh poison in Malaya, or the innumerable adaptive devices of Eskimo, are irrelevant to the "discovery of natural laws," or that the Plains Indians lacked "a reflective vision of Reality" in contradistinction to, e.g. Eastern Woodland tribes? The discussion of the relations of economic life and patterns of material culture to problems of religion and social outlook cannot be dismissed in this arbitrary fashion.

C. DARYLL FORDE

Cope: Master Naturalist. The Life and Letters of Edward Drinker Cope, with a Bibliography of his Writings classified by Subject. A study of the Pioneer and Foundation Periods of Vertebrate Palaeontology in America. HENRY FAIRFIELD OSBORN, with the Co-operation of HELEN ANN WARREN [and others]. Illustrated with Drawings, and Restorations by CHARLES R. KNIGHT under the Direction of Professor Cope. (Princeton University Press, Princeton N. J., 1931. London, Humphrey Milford, Oxford University Press. \$5.00.)

Professor Osborn's impressive life of Cope is a general life story of this great dynamic naturalist in all the aspects of his many-sided career. It is well worth the perusal of any student of the natural sciences, especially of those connected with biology and geology, including mineralogy, with general and systematic zoology, ichthyology, herpetology (including batrachology), ornithology, mammalogy, paleontology, anthropology, and natural philosophy, in all of which Cope excelled, as in a few he ranks supreme. The biography utilizes the subject's remarkable letters, which make richly pleasant reading and throw many important sidelights on scientific subjects and situations.

In comparative anatomy, paleontology and phylogeny, underlying anthropology, Cope was superlatively able and energetic, sagacious, productive, and contributive. His interests were as wide as the skies, and included all continents and seas, all creatures and races. His personal experiences and human contacts, his psychological interests and interpretations, his travels and explorations, his dealings with American citizens, Europeans, Negroes, American Indians, among whom he was frequently an incidental visitor on the plains, his general reading and philosophical speculations, his interest in comparative ethnology in connection with the countries studied and their faunae, and his special interest in human and anthropoid anatomy, variability, phylogeny and evolution, in archaeology and prehistory, together with his special work in somatology, in osteology, craniology, comparative podology and odontology, connect him with our science. Space forbids a summary of his work, either in general or in the fields of anthropology and those adjacent; but a few words, somewhat casually chosen, may be added. He seems to have aligned himself not a

little with Topinard, regarding the problems with which they dealt in common. He wrote extensively on general, on mammalian, and specifically on human dentition, and with special reference to the tritubercular origin of molar teeth. He had been trained under Leidy in anthropotomy and was *par excellence* an anatomist. Anthropological data illustrate his discussion of evolution, throughout, as well as his treatment of educational and social questions, including marriage, suffrage, government, etc.

The Classified Bibliography, of 1395, titles lists eight titles in archaeology, thirty-three in the evolution of man (anthropogeny), and three in ethnology. Some of these were critiques or reviews—in which he was wont to extend his expressions and criticisms to psychology and sociology, philosophy and religion, psychiatry, politics and art. His writings of this kind usually were strikingly informed and sagacious. He published original remarks on ancient rock inscriptions in Ohio, stone circles in the Rocky Mountains, Indian kitchenmiddens, remains of an early population in New Mexico, skeletons or skulls found in various places in America, Australian skulls, Indian drawings of feet, fossil foot prints at Carson, Pliocene traces of man, man's antiquity, Aztec design, and—most notably—papers on *Anaptomorphus*, or the missing link, and the Lemurine (i.e. Eocene Lemuroid) ancestry of man—to which he adhered. Cope's ashes, skeleton and brain are in the custody of the Wistar Institute. The brain has been described by Spitzga.

Anthropologists will find this a useful compendium on Cope and a refreshing tale of scientific adventure in the actual terrains and the intellectual purlieus of some of their own labors and thoughts.

WM. HARPER DAVIS

An Hypothesis of Population Growth. EZRA BOWEN. (Columbia University Press, New York, \$3.75.)

The formula developed in this book is succinctly stated as follows,

Population size tends to vary directly with aggregate wealth, and inversely with the height of standards of living.

The formulation of this hypothesis, whose originality the author modestly but unconvincingly deprecates, is preceded by a review of the theories of Malthus, East, Pearl, and others, coupled with a superficial analysis of birth and death rates and general remarks on the "life struggle." Following the enunciation of this great principle the author or authors (for the first person plural is used throughout the book) push the conclusions on to prophesy. In all, seven of these revelations are deduced from the formula, but it will suffice here to cite only such comforting predictions as that the white "race" will survive, the world will never face starvation on account of over-propagation, the possibility of war will be reduced, and the biologic progress of humanity will be accelerated.

The basis of the reasoning employed in this book is nothing more than the old economic determinism. It is true the author states that his conclusions apply only to capitalistic societies, but other societies and other than economic factors are con-

veniently minimized. The seeker after philosophical scientific truth will be gratified by the largess of axioms and comments of an epistemological nature which have been generously scattered through the text.

FORREST E. CLEMENTS

Societal Evolution: A study of the Evolutionary Basis of the Science of Society. ALBERT GALLOWAY KELLER. (Revised ed., New York, Macmillan, 1931. ix, 419 pp. \$2.50.)

This is a "revised" edition, but there appears to be no very fundamental revision. The thesis of the earlier book is repeated here, practically without change. That thesis is the amenability of society and social laws to the categories used in nineteenth century biology—adaptation, selection, counter-selection, variation, etc.

No type or types of social evolution are described, but rather types of social change. The author gives few long run trends but indicates many ephemeral modifications.

W. D. WALLIS

PHYSICAL ANTHROPOLOGY

Artificial Cranial Deformation. E. J. DINGWALL, (John Bale Sons & Danielsson, London, 1931. XVI, 313 pp., 55 pls., 5 maps. £3. 10s.)

The book at hand marks a substantial step forward in the study of one of the most widespread, peculiar and, so far as physical anthropology is concerned, noxious practices of man on his own body. It presents data on head deformation from all over the world, and contains much sensible discussion. Without exhausting the subject it covers the field so that it becomes at once the main work in this line.

In detail the author deals with artificial cranial deformation in Europe, Asia, Africa, Indonesia, New Guinea, Melanesia, Polynesia, New Zealand, Mexico, Central America and the West Indies, and amongst other American Indians. This is followed by a chapter of Observations and Conclusions. There are many historical references, exhaustive literature, and much detail as to the methods used by different peoples.

The conclusions are quite limited. On this score the author says:

It may be thought that after such a lengthy and tedious discussion as that which is now brought to a close some more definite conclusions ought to be attained. If that be so then my readers may come to them by themselves. I have tried to present the facts fairly and have, I hope, given a representative selection of the literature, not excluding those authors on whose testimony I myself place little reliance. From this material they can draw any further information that they require. But I must be excused from making up their minds for them.

This can only mean that with all this great gathering of data the true original causes and meanings of these practices are still doubtful. They have in fact in the course of time been forgotten, to be replaced now, when inquiries press, by guesses or lame opinions of those who keep on these practices from inherited duty or as 'the thing to do,' but who have received no reliable tradition as to the reasons.

The book impresses one with the amount of involved labor. It will certainly be useful. But it should form a basis for a future still more systematized volume and one from which unreliable data were excluded. And there are a few other desiderata for the future edition: The maps should be more distinct; and a map of the world, showing in distinct colors the three main classes of deformation (fronto-occipital, circular, occipital) would be very helpful. Plate 38 involves an error; the skull it shows is not deformed. In various plates the reference leaves out the collector. The quotation from Otis (page 190) is incorrect; there was no artificial deformation of any sort in the Aleutians, or in any other part of Alaska save the Kodiak island (slight to moderate occipital compression). Not enough attention is given to the local individual variation of the methods and results. Some rather irrelevant matters are included, as for instance, on pages 163, 220-221, etc. The list of authors should be provided with page references. The subjects of chronology and introductions, of effects of the deformation on the child and of the consequences of the several types of deformation on the original form of the vault base and face of the skull, call for separate chapters. And in general, more originality in observations would enhance the value of the volume.

In connection with the last item, the reviewer can not but wish that the deserving author may find it possible to avail himself of the enormous and highly instructive materials on cranial deformation now in the American collections, particularly that of Washington, where the numbers of deformed skulls reach into the thousands.

ALAN HEDLICKA

EURASIA

Finno-Ugrian Volume. (Works of the Committee for the study of the ethnic contents of the U.S.S.R. and adjoining countries, volume 15, with an introduction by S. F. OLDENBURG. U.S.S.R. Academy of Sciences, Leningrad, 1928. 348 pp., 1 map. R. 3.50.)

The Finno-Ugrian section of the C.S.E.C. was formed in March, 1927, and an immediate decision arrived at to survey the achievements of Russian scientists among the Finno-Ugrian tribes in the U.S.S.R. and adjacent countries in the fields of physical anthropology, ethnography, linguistics, archaeology, and history. The result is this volume. It contains six separate surveys, each with an adequate bibliography. They comprise a summary of the Russian work in physical anthropology on the Finno-Ugrian population, by D. A. Zolotarev; an ethnographical study of the Finno-Ugrians, by N. N. Poppe; a survey of Finnish linguistics, by D. V. Bubrich; archaeological investigations in the northern part of the U.S.S.R., by A. V. Schmidt; historical investigation of the Finno-Ugrian population, by A. I. Ardreev; and a map of the distribution of the Finno-Ugrian tribes, by D. A. Zolotarev.

A more or less detailed history of each investigation is given, segregating, where possible, permanent contributions from tentative conclusions. Especially impressive is the history of archeological investigation. The author defined the territory of his survey, the "north" of Russia, as the forest region lying north of a line drawn from

Mogilev through Voronej to Saratov, bordered on the west by the region of Lithuanian influence, and limited on the east by a line spanning the Urals and embracing the Tobol region. Thus including as it does the larger part of European Russia and a great part of Siberia, the survey is an important contribution to the study of Russian archaeology.

Although, as Oldenburg points out, in no branch of the study was completely systematic work possible, and both the character and the quality of the surveys vary, the mass of material collected is truly impressive. One welcomes this taking of stock as of great importance. Its necessity was accentuated by the fact that the great majority of Russian sources are inaccessible to European scholars; that, for example, Russian archaeology is a *terra incognita* even to specialists.

Revision of methodology and a growing consciousness of the futility of political borders in the realms of science account for this attempt on the part of Russians to correlate their work with that of Western Europe and to foster the latter's realization of the importance of coordinating their conclusions with the factual material of a territory which comprises one-sixth of the earth's surface.

EUGENE GOLOMSHTOK

The distribution of Samoyeds in the past. I. M. KALININ. (Izvestia of the Russian Geographical Society, vol. 61, no. 1, 1929.)

This article deals with the distribution of Samoyeds in the second part of the twelfth century. From Russian archives it is evident that the Samoyeds, now occupying the eastern part of the Archangelsk Government between the Mezen river and the Ural mountains, at one time commanded a territory reaching as far south as the shores of Lake Onega, and that later they were pushed north by the aggressive Russian colonists.

EUGENE GOLOMSHTOK

The Island Formosa or Taiwan. MME. W. D. POSDNEEVA. (Izvestia of the Russian Geographical Society, vol. 61, no. 2, 1929.)

The author presents a brief outline of economical conditions in Formosa based on Japanese sources and information obtained at the Formosa Exhibition in Tokio. The population of Taiwan (Japanese for Formosa) is described, with a short sketch of Japanese politics and the uprising of Keiran (the Nakka group) against the Japanese in 1912-1913. Some references are made to the life and customs of the primitive head hunters and to the harsh measures of the Japanese for their subjugation.

In conclusion the author, regarding the island from the Marxian point of view, states her belief in the ultimate progress of Formosa in trade, industry and transportation, and foresees the transformation of the agricultural society into an industrial one.

EUGENE GOLOMSHTOK

Classification of folklore types in accordance with the system of Antti Aarne. N. R. ANDREEV. (Russian Geographical Society, Department of Ethnography, Committee on Folklore)

The author applies the system and some of the material of Antti Aarne (*Verzeichnis der Marchentypen*, Helsinki, 1911, Folklore Fellows Communication, No. 3) to the Russian folktale material, dividing it into six major categories and indicating 2140 types as present.

EUGENE GOLOMSHTOK

Folk Tales of 'Iraq. Set down and Translated from the vernacular by E. S. STEVENS (London, Oxford University Press, 1931. xxiv, 303 pp., 16 pls)

This collection of 'Iraqi folklore presents to the widely reading public a new field of interest and enjoyment. To those of us who were brought up on Lang's polychrome series of fairy books and on Grimm it recalls pleasant and thrilling hours. Old and familiar motifs are present but recombined or re-expressed in a manner characteristically Arab.

The translator deserves much credit for the felicitous manner in which the tales are presented. One feels that they are more than mere translations of texts, yet the conciseness of the originals has been retained without sacrificing the manner or the spirit in which they were told. All these stories are current today in Bagdad, Mosul and northern Mesopotamia, known alike by all classes of society. However, the professional story-teller is disappearing, and with him or her go the accompanying patterns and, inevitably, much of the subject matter. In consequence, the timelessness of this work need not be dwelt upon.

The student of folklore and mythology will find this volume an interesting addition in that it provides material from a little known area, filling in a gap that lay between Anatolia, Armenia, Persia and Palestine, areas from which there is already some published material. No attempt has been made to group these tales in categories on the basis of either form or motif. Their composite character is perfectly apparent and is expectable, coming as they do from a region where culture is very old and the changes in races and languages many. The section of comparative notes appended at the end of the book more than compensates for the apparent lack of organization of the text. Brief but conscientious, it provides the student with most of the necessary clues for further study.

The plates interleaved with the text provide a sympathetic background for the stories that very greatly enhances the whole. Some of them are extraordinarily fine and true to life. The pictures of Bedu and Bedu customs are excellent.

It is to be hoped that the author will be encouraged to pursue her researches and present a similar collection from southern 'Iraq and also a comprehensive comparative treatment of the folklore of this focal area.

T. D. McCOWN

OCEANIA

Samoa Material Culture. TE RANGI HIROA (P. H. BUCK). (Bernice P. Bishop Museum Bulletin 75. Honolulu, Hawaii, published by the Museum, 1930. 724 pp., LVI pls., 338 figs.)

Works upon material culture have the unfortunate tendency of being readable in inverse ratio to their actual value as careful, detailed records of techniques. Dr. Buck's work, as demonstrated also by his earlier publications, is a happy exception to this rule. He has the delightful faculty of combining the most meticulous, the most painstaking and yet always lucid description of the minutiae of material and technique, with a running comment upon the social implications, the ceremonial aspects, often even the psychological significance of the objects he is describing. The Polynesian student interested primarily in custom rather than in material culture can not afford to neglect this work which contains many new items of ceremonial usage in Samoa. (Dr. Buck takes for granted a rather detailed knowledge of Samoan social organization; to understand the full implications of his social comment it will be necessary to consult other works on Samoa first.) To the student of material culture in the Pacific, and as a model upon which students of material culture everywhere can well form their style, the book is invaluable.

All of Dr. Buck's work has emphasized the importance of an understanding of the actual steps in, and manner of, manufacture, if the finished form of an object is to be rightly understood. Perhaps the greatest theoretical contribution of this study is a continual insistence, sometimes verbal, sometimes merely implicit in the nicety with which Dr. Buck records details, that a comparison of end forms of which the method of manufacture is unknown is an idle and profitless undertaking. He is equally critical of those functional interpretations of form which disregard a knowledge of method, as in his explanation of the slant join in the Samoan house rafter (pages 55-56) as the result of exigencies of a stage of construction, and not some elaborate rationale of the nature of the arch, which a careful analysis of the Samoan house shows is not supported on the basis of these so plausible joins at all.

Concerning the full and delightful ceremonial notes which accompany each section of the study a few words of warning must be given. Although Dr. Buck is fully cognizant of the many differences between villages and between parts of Samoa in ceremonial, he does not always acknowledge this fact in his discussion of special ceremonies. As a result many statements have the appearance of absolute dicta upon Samoan usage, when actually they apply to the usage of one village or one island only. This should be borne in mind, in most cases Dr. Buck's observations upon specific points of ritual should be added to the various observations already recorded, as presenting still other variants of ceremonial. Examples of such treatment are his statement as if the oven were made every day (page 137), the statement that the kava is "always served the longest way round" (page 154), which is certainly not true of the most important kava ceremonials in Manu'a, and the statement that a person without a post could not enter the house except with the status of a

dependent (page 97). In Manu'a there is a definite *matui* status known as *vaiipo*, "one who sits between the posts."¹

Dr. Buck discusses material culture in a context peculiarly Polynesian, that is, in a ceremonial rather than an economic context. This choice does not, however, skew the facts except in one instance. Concentration upon the ceremonial significance of material objects has obscured the very important question of provenience. According to casual information which I received, practically all kava bowls were made in Savai'i, the shaggy mats were made only in Ofu of American Samoa and in Western Samoa; red feathers were exceedingly rare in Eastern Samoa and had dropped out as an item in the *oloa* part of the affinal exchanges. Dr. Buck remarks on page 470 that fish nets were made by the inland villages, but furnishes no details of the method of trade. Where so many of the Samoan industries were village-contained, it would be of interest to know just how much localization of manufacture did occur. Less important omissions are the rather uneven identifications of plants and fish. Where the Samoan name only is given, work for the comparative student is enormously increased. I have noted only one omission of historical significance, and that is the communal *ti*-oven which is only made in times of famine. This is called the *Umu-Ti*, as in Tahiti, and certain very slight features,—the dress of the *manata* as he rides upon the lever which opens the oven, etc.—connect it with the firewalking of Fiji and Tahiti. The fact that, in a non-famine year, Dr. Buck obtained no account of this institution makes it more possible that an account of it may still be reported for Tonga.

Historical students will be most interested in the brief and trenchant summary of the historical relationships of Samoan material culture. This is, I believe, the most convincing statement of the errors involved in comparing museum material or the mere record of the existence of an object, use unknown, which has yet been presented. Not only should Linton's preliminary analysis of different Polynesian cultural affiliations² and Clements, Schenck and Brown's article³ based on Linton's material, be reread in the light of Dr. Buck's precise criticisms, but all comparative work of the Graebnerian type should be submitted to the same type of scrutiny.

In closing, I should like to remark how fortunate is the Polynesian student who can hope to base his conclusions from an analysis of custom upon so firm and complete a base as Dr. Buck's studies of material culture.

MARGARET MEAD

¹ In fairness to both Dr. Buck and myself it should be noted that although our two manuscripts upon Samoa appeared almost simultaneously, owing to the exigencies of field work there was no opportunity for any work of comparison or collation.

² Linton, R. The material culture of the Marquesas. Bishop Museum Mem. vol. 8, no. 5, 1923.

³ Clements, Forrest E., Sara M. Schenck, and T. K. Brown. A new objective method for showing special relationships. AA 28: 285-604.

NORTH AMERICA

Der Heilbringer. A. VAN DEURSEN. (J. B. Wolters, Groningen, 1931. 395 pp.)

This is a study of "messiahs" among American Indians north of Mexico and is chiefly valuable for its wealth of illustrative ethnographic data bearing on shamanism, religion, and magic. The material is classified by tribes and area, which greatly facilitates use of the book as a reference source. The last part of the work is devoted to an analysis of types of holy persons and a tabulation of the distribution of these types. The author has little to say about the relative age of the different idea-complexes and makes no attempt to tie up with pan-diffusionistic doctrines. *Der Heilbringer* is a well documented, sober piece of work and should be valuable to those interested in primitive religion.

FORREST E. CLEMENTS

AFRICA

Chaka. An Historical Romance. THOMAS MOFOLO. With an introduction by SIR HENRY NEWBOLT. (Published for the International Institute of African Languages and Cultures by Oxford University Press, London, 1931. 200 pp. 7s 6d.)

The publication of this story is but one of many examples of the literary activity of the International Institute of African Languages and Cultures; one is glad to note that a number of books bearing on African ethnology, linguistics, and folklore is actually issued or is in preparation. These proposed Studies of African Life and Institutions will no doubt maintain the high standard of the journal, *Africa*, for each work is to be prepared by a specialist, and due importance is attached to the necessity for publishing in English, French, and German, so maintaining the international character of the Institute.

At the outset the reader is given a brief background of the history of the author Thomas Mofolo, an introduction which supplemented by Dr. Alice Werner's notes on pronunciation of proper names provides an intelligible and helpful beginning. During early youth Mofolo was employed in pastoral pursuits among his kinsmen the Basuto, but fortunately he came into contact with a mission school where his talents were developed, so that in later life he was able to write *Chaka* and other books in Sesuto, his native language. The translation from Sesuto to English was undertaken by Mr. F. H. Dutton and Mr. W. R. Maude, who are to be congratulated on their preservation of graceful simplicity and at times a quaintness of expression that characterized the original manuscript.

Before pointing out its scientific value it is well to say that the book has a charm for any reader, even if he have no ethnological interests, who appreciates a story. It is, however, more than a tale to pass the time, for as a whole the narrative amounts to a behavioristic study of Zulu life under the despot Chaka. Modern psychological study has been concerned with examination of leadership and the factors of personal ascendancy in social groups with a view to ascertaining the social conditions and personal qualities that act reciprocally to produce the great men of history. Students of psychology who are acquainted with Professor Kimball Young's *Source Book for Social Psychology* will find material in Chapter XX that might

be profitably used in conjunction with the data supplied by Mofolo respecting the rise, the acme of power, and the downfall of Chaka.

In the earliest pages the reader, if ethnologically inclined, will at once be arrested by statements made quite casually in the course of the story. Almost immediately contact is made with witchcraft, medicine-men, and beliefs in a return of reincarnated spirits in the form of snakes. In early childhood Chaka was rubbed with medicine that caused his triumph over boys who had maltreated him. Natural history is not neglected, and for the ethnologist there is interest in beliefs connected with lions and hyenas.

Mofolo touches a point of ethnological importance on which further information is desirable when he says that

In Kaffirland an unmarried girl who bore a child was put to death, and her boy and girl companions were put to death as well, that is to say all who slept in the same huts. It was said that the whole group must have known of her act when she committed it, and that they would corrupt the tribe and the younger generation by teaching them bad habits.

Such a system of boy and girl friendships is prevalent among the Ovimbundu of Angola, and though the young people may sleep together at the house of one of the girls, virginity is esteemed and premarital pregnancy is a disgrace. A husband who proves that his bride is not a virgin bores a hole in her cloth with a brand from the hearth. He makes her take the garment to her parents, who return a portion of the presents given to them. E. Torday examined the evidence for these boy and girl friendships (*The Principles of Bantu Marriage in Africa*, Africa, 2: 256, 1929.). He notes the contradiction of ideas involved in permission of nocturnal intimacies and a demand for preservation of virginity.

The character of Noliwe, sister of Dingiswayo, is charmingly described, and an interesting custom relating to exchange of beads as a token of betrothal is noted. They did not say anything but they exchanged their beads, Chaka gave his to Noliwe, and she gave him hers.

Of Chaka's dealings with witchcraft to give him power, and of the fortifying of warriors with strong medicines, Mofolo has much to say, and all is perfectly sound ethnological fact skilfully woven into the thread of the story. On page 125 one seems to touch the core of ancestor worship when Chaka is required to provide blood for medicines that will establish his power. The witch doctor says "Today, Chaka, we are teaching thee the highest kind of witchcraft, when men kill their children or their parents so that the spirits may receive them and prosper them." The implied idea is that for success on earth the aid of powerful ancestral spirits is necessary. The psychology of dreams in African life, though discussed by Seligman, Rattray, Gutmann and others, has not been the subject of extensive study. The dreams of Chaka (page 194) give some new material for the study of oneiromancy.

Every book with merit has some definite purpose to fulfil, and if I were a teacher this little book would be recommended to my junior students of South African history and ethnology as a palatable introduction to the more technical and substantial works of A. T. Bryant (*Olden Times in Zululand and Natal*) and J. H. Soga (*The South Eastern Bantu*).

WILFRID DYSON HAMBLY

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DISCUSSION AND CORRESPONDENCE

CHOCTAW MOIETIES

Our information regarding these two ancient and long obsolete divisions of the Choctaw Indians is so scanty that any new light upon them is most welcome. In my recently published bulletin entitled "Source Material for the Social and Ceremonial Life of the Choctaw Indians," pages 76 to 79, I assembled all of the data known to me when it was compiled. Quite recently, however, Prof. A. G. Sanders, who is editing for publication material contained in the Mississippi State Department of Archives and History at Jackson, has brought to my attention a brief mention of them which throws some important additional light upon their organization and position. This is in a letter by the *ordonnateur* *Salmon*, dated Feb. 8, 1733. In reporting an estimate of Choctaw warriors furnished him by the Jesuit missionary Beaudouin, he says:

il pretend que son Calcul est juste sur le fondement que tous les Tchactas sortent de deux races principales, Sçavoir des Inoulakta qui est la plus nombreuse et la plus noble et des Eukatatlapé, qui est moins Considerable et moins distinguée. il dit, que la premiere race est partagée en sept classes differentes et la seconde en cinq ce qui forme douze partis differentes et quayant consulté des hommes de ces differentes races, chacun en particulier luy a dit a peu pres le nombre d'hommes portant armes de sa Race, et que ce n'est que par ce moyen qu'il a pu en faire le denombrement; il ajoute que chacune de ces races a un chef particulier . . .

The alleged social inferiority of the Eukatatlapé seems to be confirmed by this word itself which is used by no other writer known to me. It consists of *yuka*, captive, prisoner, slave, and *tathlapi*, five, the whole meaning apparently "the five captive, or slave groups." By other writers this is called the *Imoklasha*, "their own people," or "friends," or the *Kashapa okla*, "divided people." From the wording in another early letter it seems that it was the official Peace party among the Choctaw, the *I'holahtha* being the War party. The apparent emphasis here placed on slavery and war jars rather rudely with the seeming internal unity of the Choctaw in historic times and their reputation as lovers of peace, and it is possible that the terms employed were ceremonial and had no reference to the origin of the groups called inferior. Moreover, the *Shakchi humma okla*, "red crawfish people," who probably represented an incorporated tribe, belonged to the *I'holahtha* who are supposed to have been superior. The alleged inequality in numbers between the moieties may mean that in Beaudouin's time they were not altogether exogamous. The assertion that each moiety had a head chief also stands by itself.

JOHN R. SWANTON

SOME ALGONQUIAN KINSHIP TERMS¹

The terms for "sister's daughter" (male speaker), and "brother's daughter" (female speaker) among various Algonquian languages present a difficult phonetic

¹ Printed by courtesy of the Smithsonian Institution.

problem, though apparently two recent writers, Sapir² and Hallowell³ have not noticed this, and a third, Bloomfield,⁴ very properly (as I shall show below) makes no provision for it in his scheme of Central Algonquian phonetics, but does not discuss the difficulty at all. My sole excuse for bringing the matter up in the *AMERICAN ANTHROPOLOGIST*, rather than a journal devoted purely to linguistics, is that an ethnological as well as a linguistic fact is at stake.

To come to the point at once. There is no single Algonquian archetype that will satisfy the requirements of Cree *nistim*, Menomini *ne'nəmeh*, Fox *ne'cemī'sa*, *ne'cemī'a*, Cheyenne *na'ha'mm'* (other languages will be considered below). An archetype *ne'θem-* will account for the Cree, Menomini, and Cheyenne forms, but not for Fox *ne'cemī'sa*, *ne'cemī'a*. Therefore it is impossible to set up a single archetype for "niece," and "daughter-in-law" as Sapir (*loc. cit.*) has done. Now *ne'θem-* has an exact phonetic equivalent in Fox *ne'semya* "my daughter-in-law." Insofar as Ojibwa, and a number of other languages back Fox *'c* [not *'s*] in the term for "my niece," I believe we are justified in assuming that in Cree, Menomini, and Cheyenne the original terms have been replaced. Acceptance of the equation with the Fox word for "my daughter-in-law" is indicated by the fact that in Cree *nistim* means "my daughter-in-law" as well as "my niece." It is obvious that cross-cousin marriage with such a terminology is favored: which is not uninteresting in view of Hallowell's recent speculations, but I hasten to state that among the Cheyenne, at least, such a type of marriage is taboo. In this connection I must state that André's *nissim* (Algonquin) "belle fille, bru, fille de ma soeur, etc." cited by Hallowell is not worth a fig in view of the fact that Cuq and Lemoine give terms corresponding to both Fox *ne'cemī'a* and *ne'semya*. It is not a matter of "minor differences in orthography" as Hallowell thinks: it is a true phonetic difference; André's *nissim* in the sense of "fille de ma soeur" is simply a mishearing. Proto-Algonquian *'θ* and *c* are kept rigorously apart in Algonquin (and Proto-Algonquian *s* does not fall together with *c*). Very obviously this has a direct bearing on Hallowell's line of argumentation.⁵

Turning now to Central Algonquian languages backing Fox *'c* in *ne'cemī'sa*, *ne'cemī'a*, I can cite offhand Sauk, Kickapoo, Ojibwa, Ottawa, Potawatomi, Algonquin, Shawnee, Miami, Peoria. Natick *kushim*, "thy daughter-in-law," is not decisive, one way or the other: Proto-Algonquian *'θ* and *c* alike become *sh*. And since *'θ* and *c* both appear as *s(z)* in Eastern Algonquian (though *'l* apparently remains, thus tending to show some etymologies given with Proto-Algonquian *'θ* really have *'l*) such equations as Penobscot *nsam*, "my daughter-in-law," Malecite *nəzəm*, Abnaki and Micmac *nsəm*, "my niece," (all cited by Sapir⁶) are not surprising, for

² SAP-J 15:53, 53, 1928.

³ ICA 33:541-543, 1930.

⁴ Language 1:130-156, 1925.

⁵ *Loc. cit.*

⁶ Sapir's forms do not quite agree with those given by Speck, AA 18:143-161; the deviations do not affect the point at issue. The Penobscot term given by Speck for "cross-niece" has the same stem as "daughter-in-law," but has a diminutive suffix.

the different Proto-Algonquian stems underlying Fox *ne'cemi'a* (*ne'cemi'sa*) and *ne'semya* [similarly the Algonquin correspondents: see above; also Ojibwa, Ottawa, Kickapoo, Shawnee] would necessarily fall together in these languages. Full schedules presumably would bring this out, for according to Morgan's schedules the Malecite word also means "my daughter-in-law." This well illustrates the pitfalls into which one may fall in attempting to deduce social conditions from kinship terms without a full knowledge of the linguistic facts.

In this connection, it is proper to point out that the Cheyenne word given by Morgan for "my sister's daughter" (male speaker) as a matter of fact is not Cheyenne, but Central Algonquian; the error was undoubtedly introduced in the following way, namely, Morgan's informant, Joseph Tesson (whose son [Joseph] and whose grandson [Joseph] I knew intimately) was a Central Algonquian whose associations were rather varied, and thus it is that the word was introduced. (Incidentally it is not Menomini.)

It may be well to briefly discuss the Cheyenne word for "my daughter-in-law." The same word means also "my son-in-law," and also "my grandchild." There is no possible doubt but that historically "my grandchild" was the primary meaning as is shown by the evidence of other Algonquian languages. This can be explained on a purely linguistic basis without resorting to complex sociological deductions: in Cheyenne a single word means "my grandfather" as well as "my father-in-law," a single word means "my grandmother," as well as "my mother-in-law;" as is known, there are abundant parallels in other Algonquian languages. Nothing is simpler than to assume that the word for "my grandchild" has replaced the terms for "my son-in-law" and "my daughter-in-law" in order to match "my father-in-law, my grandfather" and "my mother-in-law, my grandmother."

TRUMAN MICHFELSON

THE REASON FOR THE DEPARTURE OF THE PECOS INDIANS FOR JEMEZ PUEBLO

The writer spent the summer months of 1929 and 1930 collecting songs in the Rio Grande pueblos and by the second season had made considerable progress in cementing real friendship with a number of Indian families, particularly at San Ildefonso. These families were invited one by one to spend the day socially at my camp the second season, having dinner there. No attempt was made to secure any data on these occasions, but conversation flowed quite naturally. At different times during the season I had been obliged to change base to the neighborhood of Pecos for some special work, and mention was made of the impending trip. Ignacio Aguilar, a San Ildefonso Indian about seventy years old, was the senior member of a family being entertained and a warm friend whose confidence had extended to taking me, unrequested, to see his private prayer shrines and permitting himself to be photographed in full *kaşare* regalia on the occasion of a corn dance. This guest asked if I had ever seen the ruin of the big town there, to which I replied that I had been there many times. Did I know why the Pecos Indians had left their village to go and live at Jemez? I said, "No; what was it?" not giving the explanation current among white men that their decimated number owing to epidemics of illness was supposed

to have made the pitiful remainder feel so insecure that they had united with the Jemez. The following story was then related, adding another bit of evidence to several vague reports of snake worship at Pecos.

Ignacio's grandfather had told him the incident, of which he had been a witness. The old man had relatives in Cicuye or Pecos and had visited there often in the days when the pueblo was inhabited. The Cicuye Indians had a snake god which they kept in a kiva and which enabled them to obtain all of the things they asked for. In return for these favors the hunters went every day to procure fresh meat for it. The snake was very hungry and required much meat. It was just after a war, and the kiva men were very busy, or perhaps for some other reason they did not feed the snake god. The snake called for food, but they paid no attention to him. Finally he became angry, so he told the kiva men, "Since you will give me no food, I cannot stay and help the people any longer. I must go away from here." The kiva men still paid no attention to the snake, so when they were all asleep, he left the kiva and started down the arroyo. He was so huge that he left a track like a small arroyo.

Ignacio's grandfather and a party of San Ildefonso Indians were hunting down by Galisteo. They were surprised to see two Cicuye Indians coming down the river. They wore almost no clothes but were clad only with loin cloths as when hunting, and seemed very excited. So some of the San Ildefonso Indians went to ask them what was the matter. The Cicuye Indians asked them if they had seen this snake god, but the San Ildefonso Indians had not. The Cicuye Indians told them, "It is well that you did not, for he might have bitten you. We have tracked him this far, but we cannot find him."

The two from Cicuye went on down the valley, following the snake's track as far as Domingo. There the snake had gone into the water and disappeared. They could find no more track on either side of the river. When they returned to their pueblo without having found the snake god, all the people said, "There is no use of our staying here because no more good can come to the Pueblo with our snake god gone." So they moved and went to live with the people of Jemez. The people of Galisteo were relatives of those of Cicuye and had been accustomed to come there to ask favors of the snake god. They too felt that disaster had befallen their pueblo with its departure from Cicuye, and being friends of the people of Domingo, went to live with them there and deserted their own home.

HELEN H. ROBERTS

ANTHROPOLOGICAL NOTES AND NEWS

DR. THOMAS RUSSELL GARTH, professor of educational psychology at the University of Denver, spoke at the convention of the American Association for the Advancement of Science, December 28-January 31, on recent investigations made by him and student assistants on American Indian psychology compared with that of whites. The studies were made on Indian reservations and colonies in Colorado, Utah and New Mexico.

ON FRIDAY, November 27, Dr. E. B. Renaud, Professor of Anthropology, University of Denver, addressed the Annual Meeting of the Colorado-Wyoming Academy of Science, at Greeley, on "Some Wyoming Pictographs." His address was illustrated with 14 plates representing the most important pictographs found last summer by the Denver-Wyoming expedition fostered by the University of Denver and the University of Wyoming for the Archaeological Survey of Eastern Wyoming.

Historic petroglyphs were seen in the Sand Creek District, south of Laramie. Red painted pictographs were found in a cave near Douglas. But the most extraordinary discovery was that of incised and painted shields in Central Wyoming, twenty-three miles south of Moneta, a small town seventy-nine miles west of Casper in a country of difficult aspect. Under the guidance of Mr. David Love of Wyoming University, and with the assistance of Mr. Jean Dubois of Denver, Dr. Renaud copied, photographed, and measured many of those strange pictures of prehistoric Indian times. They are circles with engraved and colored figures of turtles, vultures, wild turkeys, snakes, rodents, antelope, sun and moon, masks, and conventional signs. The colors employed are unusual, being green, purplish-red and orange.

Other incised petroglyphs represent warriors with shields and spears, pointed and square shouldered men and women, bison, elk, strange animals, and a variety of masks and conventional signs. Nowhere are there figures of the horse or other evidence of contact with white men, nor has any been found in the neighboring camps, this bespeaking real antiquity. It is the first time in many years of exploration that colored shields of this kind have been seen,— hence the special interest of the find for archaeology and primitive art. The marshaling of the figures on these shields recalls European heraldry.

THE STUDY OF PIGMENTATION is being brought to a degree of exactness at the department of anthropology of Denver University which should make it serviceable to physician, pathologist, and specialist in this direction, and for the detection of immigration impostors and ordinary criminals. Miss Charlotte Morell, assistant to Dr. E. B. Renaud, anthropologist and archaeologist of the University, has spent two years in research in this line, with striking results. She has made a skin-pigment analysis on hundreds of students, and, as with fingerprints, nature has been selective. No two skin colors are exactly alike.

The terms "blond" and "brunette" alone are not satisfactory; there must be terms for variations. Miss Morell employs four primary colors—black, white, yel-

low, and red. The "Davenport disc" is used in color measurements. It is very exact. Before taking the examinations ladies must be rid of cosmetics, including lipstick effects.

Pigmentation varies with sex, seasons, age, race, and physical and psychical conditions. Ultra-violet rays from the sun have a marked influence on pigmentation. Races can be subdivided, and it need no longer be simply a case of white or black, red or brown. Actually there are no such arbitrary distinctions. The delicate instrument in the hand of an expert can differentiate and make unusual diagnoses.

THE WELLCOME GOLD MEDAL

The President has received from Dr. Henry S. Wellcome the following generous offer of a Gold Medal for an Anthropological Research Essay.

To the President,

Royal Anthropological Institute.

54, Wigmore Street,

Cavendish Square,

London, W.1.

Dear Mr. President,

I have very great pleasure in confirming my offer to found a gold medal to be awarded annually by the Royal Anthropological Institute for the best anthropological research essay, subject to the conditions governing the award, which have been agreed to by your Council and myself, a signed copy of which I attach herewith.

I am therefore making the necessary arrangements so that the first award of the medal can be made in 1932.

I am, yours truly,

HENRY S. WELLCOME.

THE WELLCOME MEDAL

1. There shall be a Medal known as the Wellcome Gold Medal for Anthropological Research

2. The Medal shall be awarded annually, subject to conditions hereinafter provided, for the best research essay on the application of anthropological methods to the problems of native peoples, particularly those arising from intercourse between native peoples, or between primitive natives and civilized races

3. The Medal shall be awarded by the Royal Anthropological Institute on the recommendation of a Medal Committee to be constituted as hereinafter provided.

4. The Medal Committee shall consist of the President of the Royal Anthropological Institute for the time being as chairman, the Conservator of the Wellcome Historical Medical Museum for the time being, and three members to be nominated respectively, for a period of three years, by the Presidents of the Royal Anthropological Institute, the Royal Empire Society and the African Society.

5. The Medal shall be open to competition among all nationalities, and shall be announced at least once annually in the publications of the Royal Anthropological Institute, the Royal Empire Society and the African Society.

6. The essays must be of moderate length. They must be submitted in English, in triplicate copies, at the office of the Royal Anthropological Institute on or before the first day of January of the year in which they are to be considered by the Committee.

7. The Medals will be awarded at the annual meetings of the Royal Anthropological Institute.

8. The Medal Committee may appoint on any occasion a referee or referees, but no award shall be made except on the recommendation of the Medal Committee to the Council of the Royal Anthropological Institute.

9. Provided, in any year, no essay shall have been submitted which in the opinion of the Medal Committee attains such a standard as to justify the award of the Medal, no award shall be made.

10. Any person to whom a Medal has not been already awarded, may submit an essay for competition in any subsequent year.

11. Every essay for which a Medal has been awarded shall, if unpublished, be submitted for publication by the Royal Anthropological Institute unless otherwise decided by the Medal Committee.

Agreed. HENRY S. WELLCOME

The Fellows of the Institute will join heartily with the President and Council in expressing their gratitude to Dr. Wellcome for this munificent encouragement to anthropological research.

[*Reprinted from MAN, 1931, 271.*]

JOSEPH BAYER, director of the division of Anthropology and Prehistory in the State Museum of Natural History in Vienna, and editor of the journal "Eiszeit" is reported to have died.

AT THE ANNUAL MEETING of the Board of Trustees of the American School of Prehistoric research, held at Andover, Mass., December 28, 1391, Dr. George Grant MacCurdy of Yale University was reelected Director.

American Anthropologist

NEW SERIES

VOL. 34

JULY-SEPTEMBER, 1932

No. 3

SOME PROBLEMS OF FAR EASTERN ARCHAEOLOGY¹

By S. YUNG LIANG

WITH the exception of the crude stone implements found in West Mongolia, which recall the European Eolithic types but otherwise have no valid claim to similar antiquity, the earliest human relics found in the Far East belong to the Palaeolithic.

The geographical distribution of the Palaeolithic finds is as follows:

(1) The South Siberian group in the region around the headwaters of the Yenisei river and in the Transbaikalian basin, including Tomsk, Krasnoyarsk, Minussinsk, Irkutsk, etc.

(2) The North Chinese group in the Ordos region and in the northern parts of Shansi and Kansu. Between these two groups, there is a subgroup in the Orok Nor lake region in West Mongolia, and the trace of another (actually only one surface specimen) near the East Siberian seaport town, Vladivostok.

(3) There is the Indian group, which is included here for comparison.

Among these, only a few sites in the South Siberian and the North Chinese groups are comparatively adequately studied. No summary of the sites will be attempted here, but a few facts concerning the stratification, faunal, and cultural contents of the Palaeolithic deposits are given in the following tables to facilitate comparison and study.

CHOEI-TONG-KEOU, ORDOS (Teilhard)

<i>Stratification</i>	<i>Faunal contents</i>
Surface soil (with Neolithic)	Horse
Post-loess river deposit	Rhinoceros
Conglomerate layer	Hyena
Loess (with Palaeolithic)	Gazelle
Conglomerate layer	Antelope
Red clay	Ox
	Ostrich eggs

¹ This paper was completed in December, 1929.

SJARA-OSSO-GOL, ORDOS (Teilhard)

<i>Stratification</i>	<i>Faunal contents</i>
Surface soil (Neolithic)	Elephant (<i>Elephas</i> sp.)
Lacustrine deposit	Rhinoceros (<i>Rhinoceros Ticho.</i>)
Ancient dunes	Horse (<i>Equus hemionus</i> , <i>Equus</i> sp.)
Palaeolithic level	Camel (<i>Camelus</i> ; cf. Knoblochi)
	Giant deer (<i>Cervus megaceros</i> var.)
	Canadian deer (<i>Cervus canadensis</i>)
	Gazelle (<i>Gazella przewalski</i>)
	Sheep (<i>Ovis ammon</i>)
	Wild cattle (<i>Bos primigenius</i>)
	Hyena (<i>Hyacna spelaea</i>)
	Ostrich
	Many other species

GRAND LOESS REGION (Teilhard)

<i>Stratification</i>	<i>Faunal contents</i>	
Loess	<i>Helix</i> and <i>Pupa</i>	
Stratified sandy beds		
Conglomerate layer		
CHOEL-TONG-KEOU	SJARA-OSSO-GOL	GRAND LOESS
<i>Cultural contents</i>	<i>Cultural contents</i>	<i>Cultural contents</i>
Anvils	Microliths	Scrapers
Hammers	Worked horns	Hammers
Nuclei	Worked bones	
Rough blanks, or bifaces		
Points		
Side-scrapers		
End-scrapers		
Burins		
Microliths		

AFONTOVA, SIBERIA (Merhart)

<i>Stratification</i>
Black humus
Yellowish-brown loamy loess (with Palaeolithic)
Sand and gravel layers

PERESSELENTSCHESKIJ POINT, SIBERIA (Merhart)

<i>Stratification</i>
Dune sand
Dark Iron Age level
Sand

Yellow loess (with Palaeolithic)
Rubble

UPPER YENISEI REGION

<i>Faunal contents</i>	<i>Cultural contents</i>
Reindeer (<i>Rangifer tarandus</i>)	Crude cleavers
Horse (<i>Equus caballus</i>)	Side scrapers
Bison (<i>Bison priscus</i>)	Points
Wild cattle (<i>Bos primigenius</i>)	Scratchers
Giant deer (<i>Cervus megaceros</i>)	Nuclei
Antelope (<i>Antilopa saiga</i>)	Blade-like flakes
Elephant (<i>Elephas primigenius</i>)	Bone points
Rhinoceros (<i>Rhinoceros ticho.</i>)	Bone awls
Cave fox	Reindeer horn baton
	Microliths
	Bone and horn anvils

It is clear from these tables that the Siberian and Chinese groups are strikingly similar. All the sections here show nearly the same order of stratification: there is at the base a rubble layer, which is superposed by a loess (the Chinese phase) or a sandy (the Mongolian phase) layer, on which is again laid the surface layer. The lists of faunal remains of the two groups have at least four species in common. The implements are generally the same, and the culture-bearing strata in both areas have been assigned to the Middle Pleistocene time. The faunal and industrial remains point to a steppe climate and a Mousterian-Aurignacian type of culture.

However, there are minor differences which raise many questions that cannot be properly answered by the available data, though it is important to keep them in mind in future researches in this field. Most of these problems will have to be solved for archaeology by the geologists and the paleontologists.

First of all there is the problem of stratigraphy. The culture-bearing strata in the various sites may have been approximately contemporaneous, yet the differences among the three principal Chinese sites and between these and the Siberian sites are too great to be wholly neglected. The time relation of the Mongolian and Chinese phases and the Grand loess, and the relation of these to the Siberian stratum have not yet been satisfactorily worked out. Are these variations entirely due to latitudinal and other environmental differences, or are they the result of a difference in time?

As for paleontology, in its present status in this region it can do nothing to help solve this question. The nearly exact identity of the faunal con-

tents of the three Chinese sites indicates contemporaneity. But an inspection of the table will show that in spite of four common species—*Bos primigenius*, *Cervus megaceros*, *Antilopa saiga*, and *Rhinoceros tichorhinus*—there is considerable difference between the Chinese and the Siberian group. The species most commonly found in the Chinese group, such as *Rhinoceros tichorhinus*, *Bos primigenius*, *Equus hemionus*, etc. are found either only rarely or not at all in the Siberian group, while the most abundant Siberian species, such as *Rangifer tarandus*, *Equus caballus*, *Bison priscus*, etc., are lacking in the former. Both of the faunal groups, when taken as a whole, indicate a steppe climate, but the emphasis is decidedly different. One shows a drier steppe climate, as evidenced by the abundant reindeer remains; the other, a moister climate, implied by the quantity of rhinoceros bones. Again the question may be asked, Is this due solely to a latitudinal difference or to a chronological difference? Was the reindeer found in Siberia and absent from the Ordos region simply because it had never got beyond the southern border of Siberia, and the predominance of rhinoceros in the Ordos simply because of the expectedly better water supply in that area? Or was it because reindeer had replaced the moisture-loving rhinoceros in Siberia with the onset of a glacial maximum,^{1a} and because the lesser degree of removal from the wet interglacial period had kept the rhinoceros alive in the Ordos when the Palaeolithic stratum was deposited? Either of these positions may be successfully taken, and plausible theories built for each, but without further discoveries they cannot even assume the aspect of hypotheses.

The cultural evidence renders the situation still more intricate. However, there is no question of origin here. The occurrence of Mousterian and Aurignacian types of stone implements as well as microliths in an isolated stratum in the various sites without any related culture above or below appears to show that the origin of the culture is to be sought somewhere else. The conceivability that would come first to the mind is the diffusion from either of the two groups to the other, the two being both similar and dissimilar enough to make this not impossible. But it must be remembered that the deposition of the Siberian Palaeolithic remains took place during a cold dry period, and it is very doubtful whether the Palaeolithic men were able to cross the barriers set by the Gobi desert and the snow-clad mountains. The next suggestion that would naturally occur to us—a common origin somewhere in the West—has a better case. But there still remains the difficulty of the mixed occurrence of Mousterian, Aurig-

^{1a} An unwarranted assumption of parallelism with European glaciation.

nacian, and Microlithic types of implements in a single stratum, which in none of the cases exceeds the thickness of 50 cm. And the contrast between the crude Mousterian types of the Chinese group and the full Mousterian types (as evidenced by the abundant occurrence of typical Mousterian side-scrapers) of the Siberian group, as well as the absence in the former and the presence in the latter of bone and horn industry, have to be explained. Assuming with some European authorities a pre-Mousterian culture all over the world, we may theorize that before the carriers of the Mousterian type of culture migrated into North China, they came into contact with the Aurignacian influence and adopted some of the latter's cultural traits. For the Siberian group the theory may likewise be held that a more advanced Mousterian group had come under the influence of the Aurignacians and was pressed by the latter into the Upper Yenisei and Transbaikalian basin. But there still remain the microliths, which are not very diminutive and carry steep bold marginal chipping of Aurignacian aspect. They cannot be entirely explained away by the theory of adaptation to local material, which in the present case is quite similar in the two areas. However, there is no reason why the West European typology and chronology should be exactly followed in the study of the Middle Pleistocene cultural remains in the Far East, and we should not be too much surprised if future research revealed a distinct sequence of cultures there.

The Palaeolithic group discovered in the Orok Nor Lake region in West Mongolia was more likely to belong to the South Siberian group, for it was separated from the Ordos group by the Gobi desert. The finding of an Aurignacian-like stone point at the foot of a small cliff near the town of Vladivostok may perhaps be taken as an indication of the eastward extension of this culture type.

No human skeletal remains have been recovered from the Palaeolithic stratum of any of these sites. And the only trace of Early men are three teeth² from the upper Pliocene deposit in a cave near the village of Chou Kou Tien, seventy li southwest of Peiping, which are claimed to be similar to and roughly contemporaneous with the Heidelberg jaw.

The Palaeolithic type of culture in India has not been nearly so adequately studied. But the existence of stone implements of the Palaeolithic type is well known, and it is only necessary to call attention here to the interesting sequence of Mousterian, Capsian and Tardenoisian cultures, paralleling similar series in Syria, North Africa, and Southern Spain. Some statements about the Northern groups may lead one to the theory of a Northern

² It was recently reported in the newspapers that parts of ten skeletons had been recovered from the same cave.

Palaeolithic sequence of Mousterian followed by Aurignacian, and a Southern Palaeolithic sequence of Mousterian followed by Capsian, the two cultures developing separately and coming in contact, so far as is known, around the Mediterranean basin. Of course this is a mere supposition, but the situation is interesting and worth looking into.

The resemblance between the so-called Ceylon Palaeolithic stone implements and those from the Archaic period of the Hoabinhian culture in Indo-China is of high interest. They are similar in form and make, but absolutely different in material. In both areas the finds were associated with remains of mammals still existing in those places and with no definite geological level. With much hesitation the authorities have assigned them to the Magdalenian. But the almost total absence of bone and horn industry makes this extremely doubtful. And no matter whether they were or were not parallel to any of the European Palaeolithic phases, these stone implements were most probably pre-Neolithic. The absence of pottery and of the technique of polishing stones, as well as the extremely archaic appearance lend support to this view. The occurrence of Chellean and Acheulian amygdaloid type of implements is of much significance, for they tie up these groups, at least typologically, with the Indian Palaeolithic culture, even if contemporaneity is out of question, and add color to the theory of a Northern and a Southern Palaeolithic or basic group in the Far East.

The relation of the Ceylon with the Southern Indian group, and of the Indo-Chinese group with these two groups, is as yet uncertain. Were both Ceylon and Indo-China marginal recipients of cultural influence from India in that early period, as they were in later times, or did Indo-China receive indirectly from Ceylon? The scarcity of remains of Magdalenian type in India seems to favor the latter view. But much more exploration has to be done before anything like a definite statement can be made. And finally there is also the problem of the relation of this whole South Far Eastern to the Northern group.

As for the Neolithic culture, it is distributed over nearly the whole of the Far East, but sites which have been scientifically investigated and reported upon are very few indeed. As in the case of the Palaeolithic sites, these are again concentrated into a Northern (Chinese, Mongolian, and Manchurian) group, a Southern (Indo-Chinese) group, and a peripheral (Korea-Japanese) group. And for each of these groups there is a relative chronology, based largely on stratigraphical observations.

The chronology for the Japanese area is a little out of date, and we

have to wait for the evolution of a more complete one from the mass of material gathered in recent years. For the Northern area, the most complete one is N. C. Nelson's tentative chronology for the Western Gobi Desert region, beginning from the latest. The levels run in the following order:

1. Pure Mongol
2. Pre- or proto-Mongol
3. Neolithic
4. Mesolithic
5. Palaeolithic

Many elaborate chronologies have been worked out by various authors for the North Chinese Neolithic. In the Indo-Chinese area in general, the following series is usually found:

1. Bronze, and stone
2. Late Neolithic
3. Intermediate
4. Lower Neolithic
5. Pre-Neolithic

Leaving aside the Japanese area for the moment as peripheral, it is significant that West Mongolia is the only region where a consecutive series of cultural strata from the Palaeolithic up to the recent time has been recorded. North China, East Mongolia, South Manchuria, and North Korea, where extensive archaeological explorations have been carried on in recent years, have not revealed anything approaching a connected sequence of cultural levels. In the Ordos region, according to the stratification, there is a big gap, involving considerable change in the climate and topography of the country, between the Middle Pleistocene Palaeolithic deposit and the surface Neolithic remains. In the Yellow River basin in North China, only late Neolithic sites have been found. Though forty or more of these have been excavated, no discovery of the superposition of Neolithic on Palaeolithic, or of Bronze on Neolithic, has ever been made. Further to the east, in East Mongolia, South Manchuria, and North Korea, a similar late Neolithic is generally found in the surface soil, mixed with bronze and iron objects.

Looking more closely at the West Mongolian chronology, we find that the pre- or proto-Mongol stage, which follows immediately on the Neolithic stage, is characterized by iron, not by copper or bronze objects, and is associated with stone inclosures and stone heaps. The same situation is also found in East Mongolia and South Manchuria. It has been rather plausibly suggested that the origin of this iron culture is to be sought in the

headwater region of the Yenisei, where it has been found to superpose on the Palaeolithic level, though separated from the latter by a sterile layer.

All through Indo-China, from Tonkin to Cambodia, generally the same cultural sequence is found. But considerable differences exist among the local groups, each having its own local characteristics. Thus, there is the Hoabinhian group with its developed Archaic phase, the Bacsonian group with its developed late Neolithic phase, and the Cambodian group with its developed Bronze phase. So far no iron remains have ever been found with any of these phases.

To turn to the different cultural stages, the Mesolithic type of culture is found only in West Mongolia. It may be reckoned equivalent to the European Azilian in its stratigraphical position and in some of its implements. The typological parallelism with the West European culture is interesting enough, but it will gain much more significance if the relation of this culture to the underlying Palaeolithic deposit is more definitely elucidated. Did the Mesolithic develop from the Palaeolithic in this region, or did the change result from contact with the outside, and what part did the Microlithic play?

In Indo-China no cultural remains of Mesolithic type have been found between the pre-Neolithic and the lower Neolithic. Instead there is a truly transitional type that serves as a perfect connection between the two stages. This probably indicates a local development which differs not only from the group in West Mongolia to the far North, but also from the South Indian group where Tardenoisian types of remains are claimed to have been found. Some of the archaic Japanese stone implements, by the way, show distinctly this transitional character.

The study of the Neolithic culture is overshadowed by that of the late Neolithic culture in the Far East, and especially in the Northern groups. It is by far the least defined stage. In the north it occurs along the western and eastern borders of Mongolia, South Manchuria, and in traces seemingly along the margin of the Lop Nor desert. It is characterized by handmade pottery decorated with imprinted, incised, and modeled ornament; by partly polished stone implements as axes; grinding-stones; and, above all, by chipped stone tools and weapons, such as knives, scrapers, arrowheads, and flakes. In West Mongolia there is evidence that it is developed from the local Mesolithic. Its situation on the borderland between mountains and deserts is interesting. Is this position only apparent, or does it point to a semi-nomadic people, as the rarity of agricultural implements and the comparative abundance of arrowpoints would suggest? The river of lacustrine deposit which overlies the loess that contains the

Palaeolithic remains and on which the late Neolithic remains are found, indicates most probably a more humid climate than that of the present during the Neolithic time. Did this favorable condition lead to the expansion of the West Mongolian group east into East Mongolia and west to the outskirts of the Lop Nor desert? And if it did, then why did it not expand into the fertile Yellow River basin of North China?

This leads us to the problems of the late Neolithic culture. In Mongolia and in Manchuria the late Neolithic culture was developed from the local Neolithic culture and in its turn developed into the more recent cultures. But in North China there is an apparent gap between the Palaeolithic and the late Neolithic. Is this apparent absence of the full Neolithic remains an accident of exploration, or is it really non-existent in this area? There are indications that it is due to insufficient exploration and to the failure to study the existing material in a systematic fashion, and that the late Neolithic of North China evolved from a generalized Neolithic culture similar to that of Mongolia and Manchuria. But any definite solution of the problem can only result from future investigation.

During the late Neolithic time definite local characteristics seem to have developed in the different areas: broad flat perforated stone knives, pointed-based and tripod pots and painted pottery in the North Chinese area; high-footed pots decorated with incised, punched, and modeled ornaments in the Mongolian-Manchurian area. Cultural streams from the two areas seem to have met in the region north of the gulf of Pe-chi-li about the close of the North Chinese Neolithic, as evidenced by the mixing of pottery and stone types in that region.

The relation between these two cultural areas is made complex by the recent discoveries at P'i-tzu-wo, South Manchuria. The mixed occurrence of late Neolithic stone implements and pottery with early Han bronze objects and pottery, suggests that the Neolithic culture had in this area lasted down to the first century before Christ. Furthermore, the recovery from the same site and within the same deposit of a group of painted pottery which differs radically from the North Chinese group in the application of paint after firing, in the strictly rectilinear design, and in the low hollowed cone-like foot, calls for a reorganization of our knowledge of Far Eastern painted pottery.

In Indo-China the Neolithic culture is also comparatively vaguely defined. Perhaps this is because it directly evolved from the pre-Neolithic culture and because of its generalized character. It has the basic axe and adze types which not only occur in the Far East but also in Europe and in Africa. But the almost total absence of small implements, such as flake

blades, scrapers, etc. distinguishes it from the others. The distribution of this generalized culture is still problematic.

The discovery in a Neolithic kitchen-midden at Dong-hoi, Annam, of a few crude unslipped painted pottery sherds among incised pottery with high foot and cord-marked pottery should be carefully noted. So far the excavator has only suggested the Aeneolithic Sicilian painted pottery as a parallel.

There seemed to be a break between the Neolithic and late Neolithic cultures in Indo-China. There appear not only the polished shouldered axe and the long straight-sided chisels, which are characteristic of this period, but also small implements of stone. The origin of these new forms is still uncertain, some ascribe them to imitation of imported metal prototypes, others to immigrant groups. But their almost exclusive occurrence in Greater Indo-China should be remembered in this connection.

Notwithstanding much archaeological exploration in Korea and Japan, no systematic study of the prehistoric cultures seems to have been attempted, therefore no general comparison with other areas can be made. The evidence of the pottery and stone remains appears to show that cultural streams from the north and from the south Far East had come together and mingled in these areas throughout the Neolithic. The most striking example is the occurrence of both the semilunar stone knife of the north and the polished shouldered axe of the south in the late Neolithic deposits in Japan. However, these are only hints of possible relations, which must be more carefully investigated.

As for the racial affinities of the carriers of the various Neolithic cultures, recent investigations show that the late Neolithic men in Japan resemble the modern Japanese sufficiently to warrant the use of the term "Proto-Japanese." But the problem of late Neolithic population in Japan is always confused with the Ainu question, and Japanese archaeologists have not yet been able to form any definite opinion. Generally, they admit some slight Ainu affinity.

In the case of Indo-China, the skeletal remains show that the bearers of the late Neolithic culture differ considerably from the present highly Mongoloid population and recall the physical type represented by the Miaotse in Southwestern China and in Northern Indo-China.

The late Neolithic or Aeneolithic population of North China seems to diverge somewhat more from the modern North Chinese type than do those of later prehistoric times and to show resemblance in some features to the Tibetan B or Kham Tibetan type of Morant. This and the later

historical relation of Tibet with the Kansu area, from where most of the skeletal material came, ought to be a sufficient reminder to the archaeologists to look more closely into the prehistoric remains of this plateau region, which up to the present time has been regarded more as an archaeological barrier than a bridge between the north and south.

The two skeletons from the graves of the P'i-tzu-wo site in South Manchuria, though much later in time, resemble the late Neolithic men from Sha-kuo-tun and Yang Sha Tsun more closely than the modern Northern Chinese, and the modern Northern Chinese more closely than the modern Korean. This discovery is pregnant with meaning which can only be understood in the light of future investigation in this country.

When we turn to the metal culture, the situation in Indo-China is comparatively simple. An indigenous bronze culture seemingly started from a humble beginning, as testified by the Tonkin bronzes, and later developed into the elaborate Cambodian Bronze culture. No connection has yet been made with any outside group, and its distribution seems to extend into Southwestern China.

The condition in the Northern area as a whole, including Southern Siberia, Mongolia, Manchuria, North China, Korea, and Japan, is more complicated. According to some, the Bronze culture came after the Iron culture in South Siberia, Mongolia, and Manchuria; in South Siberia the Iron culture level is said to have rested on a sterile layer which separated it from the Palaeolithic level and contained no Bronze Age remains. Practically the same cultural sequence was found in Mongolia and Manchuria. But in the latter areas stone objects and datable Chinese bronze coins of the fifth and the fourth century B.C. were found mixed with iron objects. A similar condition has been claimed for the Altaic region in the west and Japan in the east, but without as much evidence. The support which has been most frequently resorted to is the presence of tumuli and collective burials containing iron in all these areas. So if these claims have really any foundation in fact, iron must have been in use in South Siberia and adjacent country at the end of the first millennium B.C. when according to some authority, bronze first appeared in the Minussinsk region.

In China the historical bronze vases dated back to at least the eighteenth century B.C., and the use of bronze for the manufacturing of arms lasted down to the first century of the Christian era. The relation of this Bronze culture to the late Neolithic culture in North China has not yet been satisfactorily worked out. But the similarity in form between the bronze li and hsien and the late Neolithic pottery li and hsien is so close that the imitation of the pottery forms in bronze can hardly be doubted. The same thing applies to the long jade knives with a series of perfora-

tions and the late Neolithic stone knives of similar form. However, this admission of imitation does not settle the problem of the origin of the Chinese Bronze culture. Of course it may be pointed out that the late Neolithic culture, which has been generally dated to the first half of the third millennium B.C. is separated from the full development of the Bronze culture by 500 years, a long enough duration for the evolution of even the most specialized forms. But so far no primitive bronze forms have yet been found in China that could be regarded as ancestral to the historical bronze vases. Thus the apparently abrupt appearance of a full-fledged Bronze culture remains to be explained.

Relation with Bronze cultures of West Asia and East Europe has been variously suggested. Perhaps the most convincing is based on the similarity of decorative motives. This only shows that the Chinese Bronze culture had received influence from the outside, but does not explain its origin. Another suggestion of similar nature is the derivation of the late Chou knife-money, *ming-tao*, from the small Minussinsk bronze knives. Many other examples can be cited, but none really throw any light on the point under discussion.

According to a reliable Chinese literary document, iron was used to manufacture big caldrons at as early a date as the first years of the seventh century B.C. There is historical evidence that in later times the use of this metal was learned from the Northern tribes; and that it was during the Tsin dynasty (ca. 220 B.C.) and due to the border warfare that iron arms came into fashion. There is no similar record for the introduction of iron at an earlier period but there can be little doubt that it had come from the same direction.

The later development of the metal culture belongs to the historical epoch, at least in China, so is beyond the scope of this paper. But even within the limits set for this paper the material for study is so abundant and at the same time so very scattered that only some of the most important hints and the widest gaps in the material are pointed out and discussed. We have to leave out of consideration not only the very interesting problems of the cultural relations between the Far East and the Near East and Europe, but also the discussion of some of the most important individual cultural traits.³

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³ The following authors have been frequently referred to, but all direct references to their works are omitted from the text: W. J. L. Abbot, J. G. Andersson, T. J. Arne, J. Baye, Boule, H. Breuil, M. Colani, Licent and Teilhard, H. Mansuy, E. Patte, H. W. Seton-Karr, K. Hamada, L. A. Cmmiade, N. C. Nelson, G. v. Merhart, R. A. Smith, H. Schmidt, R. Torii, and many others.

THE KINSHIP NOMENCLATURE OF THE PUEBLO INDIANS

By ELSIE CLEWS PARSONS

TO THE standing controversy about the influence of sociological factors as against the influence of linguistic factors in kinship nomenclature, Dr. Lowie has recently made a contribution based on an analysis of Hopi nomenclature.¹ The Hopi are a Shoshonean-speaking people, but they have a highly developed system of clanship which is not a character of most Shoshonean tribes. Does clanship find expression in the Hopi nomenclature? Do certain nomenclature traits of other Shoshoneans persist among the Hopi—reciprocity and the differentiation of maternal and paternal grandparents? Lowie finds that reciprocal terms do not occur, that there is no bifurcation in the grandparent generation, that traits which may safely be imputed to clanship do occur—classification of father's brother and father, mother's sister and mother, child and parallel sibling's child, with these terms extended to clansfolk and with a tendency to override the generation principle; e.g., the father's sister's female descendants through females are all called by the same term as the father's sister, or again the father's sister's husband is called grandfather, his son (the speaker's father's sister's son) being called father; and he concludes

that linguistic conservatism has been of slight importance in the history of the present Hopi nomenclature and that the clan concept has exerted a deep influence upon it.

Only incidentally in this discussion does Dr. Lowie refer to the kinship nomenclatures of the other Pueblo. A comparative survey of the Pueblo will be found I think to have a bearing upon Lowie's Hopi findings and upon the sociological-linguistic controversy at large. The tables of terms will be of practical value to students.

Let us recall briefly the social organization of the Pueblo in so far as it may be supposed to touch the various categories of kinship nomenclature, organization according to clan, to moiety, to sex, to marriage, and to seniority. All the tribes, except the Tanoan-speaking,² are characterized by a clanship system which, with some exceptions among the Northern Tewa, is matrilineal. In all, however, the father's clan has significance;³ you are said to be the child of your father's clan. In the ceremonialism of the personal life definite functions attach to the father's people, first to the paternal

¹ Robert H. Lowie, *Hopi Kinship*, AMNH-AP 30, pt. 7, 1929.

² Of Isleta, Sandia, Picuris, and Taos.

³ As among the matrilineal Crow and Hidatsa (R. H. Lowie, *Notes on the Social Organization and Customs of the Mandan, Hidatsa, and Crow Indians*, AMNH-AP 21: 89-90, 1917).

relatives nearer in blood, then, in default, to the remoter relatives of the paternal clan. This ceremonial connection with the paternal clan appears most distinctively in the Hopi rituals of naming and of marriage, and in all the tribes in funeral observances. As far as I know, in all the tribes the father's sister or kinswoman invariably washes the corpse. The rite of head-washing, which is always associated with initiation into a new group and often with other ceremonial performance, is an important function of the paternal kinswomen. "Aunts," i.e., paternal kinswomen, are assigned special rôles in "dances," more particularly war dances. At Zuñi, ceremonial offices which are associated with clanship are filled not only by clan members but by children of the clan; in fact in some offices there is a regular alternation between clansmen and children of the clan; e.g., one year the office of New fire maker is filled by a Badger, fire being associated with the Badger clan, and the next year by a child of Badger. The important offices of the ritual clowns (Koyemshi) are always filled by a child of the clan. Among the Hopi, too, children of the clan may substitute in office for clansmen. In general it may be said that the sense of clan solidarity, as it is expressed in ceremonial office holding or in ritual as well as in economic activities, is strongest among the Hopi and weakest in the Rio Grande towns, appearing as a marginal trait among the Northern Keres and Tewa.⁴

Among the Tewa the patrilineal moiety is the paramount principle of social organization. If anything it is endogamous; if a woman does belong to the opposite moiety she frequently joins her husband's moiety by an adoption ceremony. But it is in the ceremonial life rather than in marriage that the moiety principle is expressed. There is a double kiva system for Winter People and Summer People, and a double Town chieftaincy. The double kiva system with its effects on dance organization and on the clown societies occurs at Jemez and among the Eastern Keres who have, however, a single Town chieftaincy. Among Tanoans there is marked moiety expression in ceremonial organization. In the West there is but a trace of moiety.

Distinctions of sex are marked in the Pueblo culture, in dress, in occupations, and in the ceremonial life. The distinctions are a matter of division of functions between the sexes rather than of subordination of one sex to the other. The house and all the activities which center in the house appertain to women, the outside or public life to men. Even when women share in the public ceremonial life, their rôles follow lines of domestic concern, e.g., providing food for the fetiches, whether mask or corn ear or animal image, and for the ritual impersonators, the priests, the doctors. Speech is somewhat differentiated according to sex—the word for thanks, which is

⁴ See E. C. Parsons, *Tewa Kin, Clan and Moiety*, AA, n.s., 26: 333-339, 1924.

in constant use, is different for male and female in most, if not all, the languages; exclamations also vary with sex, and probably adjectives; but as far as I know, in Zuñi, Keresan, and Hopi, gender does not appear in the grammar, except in the matter of suffixes of personal names, the sex of which otherwise is also usually distinguishable.

Marriage throughout the tribes with clans, the Tewa excepted, is exogamous, and taboo in the father's clan as well as in the mother's. However, there are more cases of marriage with a child of the clan than with a clan member, and marriage into your father's clan passes comparatively unstigmatized. With a few ambiguous exceptions to be referred to later, there appear to be no preferred marriages. Marriage is monogamous, and in the West more or less brittle. In the East, Catholicism has had some effect in precluding divorce, but the effect is probably more apparent than real. For example, at Laguna and at Jemez partners are changed in youth much as at Zuñi, only the mating before the church marriage is surreptitious and without obligation on the part of the man to the girl's household. At Zuñi and among the Hopi, houses are owned by the women and descend from generation to generation of women, but in the East the men own houses as well as the women. A son as well as a daughter may inherit a house, and a man may build or buy a house not merely for his wife, but for himself. In the more northern towns, in fact, the men are primarily the house owners. There is an interesting coincidence in the distribution of house-owning and of clanship in passing from West to East, from the unquestioned female proprietorship of the Hopi and their highly developed clanship system to male proprietorship of houses at clanless Taos.

In house inheritance in both West and East the principle of seniority figures to a certain extent, likewise in inheritance of ceremonial office, in so far as the hereditary principle is expressed as it is among the Hopi, where other conditions being favorable the oldest son of the oldest sister succeeds to chieftaincy. In daily life, however, the principle of seniority within the same generation figures but little; no more, I incline to think, than in the family of the white American. In Zuñi folk tale and ceremonial organization there is an exception. Here the older brother-younger brother pattern is conspicuous. The parallel tale told in Keresan is in this respect told quite differently.

On the other hand between generations throughout the tribes the principle of seniority is prominent. It appears in marriage choices, and the older people have much more authority and control than their juniors both in the house and in sacerdotal organization.

To sum up, in all the foregoing particulars, not to speak of others, the

social organization of the Pueblo Indian peoples is fairly homogeneous. The chief differences are between the Western and the Eastern Pueblo in their practice of householding, and in their attitudes toward moiety and clan.

Let us turn now to table 1⁵ and its analysis.

FORKING AND MERGING

Throughout the tribes, direct and collateral kin are classified together, and maternal and paternal lines are distinguished; to use Lowie's term, we have the forked merging type of classification which is associated with clan-ship. But there are notable variations, or exceptions, both in the merging and in the forking processes. At Zuñi, Isleta (possibly Taos), and among the Tewa, mother's sister has a distinctive term, although at Zuñi (Isleta, unknown) the term mother is also used, and at Hano a man will call his wife's mother's sister, mother. At Hano there is a distinctive, although obsolete, term for father's brother, and at Santo Domingo, also at Zuñi,⁶ instances have been recorded of distinguishing between father and father's brother. Among the Northern Tewa, at Jemez, and at Taos there is no distinctive term for father's brother, but in practice the term for father is not applied, a general term for senior kinsman, paternal or maternal, is used.

Other exceptions to the distinction between maternal and paternal kin appear, notably in the grandparent generation. Among the Hopi, Keres, Northern Tewa (Nambé excepted), and at Taos, there is no distinction between maternal and paternal grandparents; at Zuñi, at Isleta, and at Hano, maternal and paternal grandmothers are distinguished, but not grandfathers. (At Hano the paternal grandmother may also be called by the term for maternal grandmother.) In all the tribes, then, mother's father and father's father have the same term. There are also some slight variations in the parent or aunt-uncle generation. For father's sister there is among Hopi and Tewa, and at Zuñi, Isleta, and Jemez, a distinctive term; at Laguna there is an age-class term, which is used, however, in reference very dis-

⁵ These data I have collected over a term of years, excepting the terms for the western Tewa or Hano, which were recorded by Barbara Freire-Marecco (*Tewa Kinship Terms from the Pueblo of Hano, Arizona*, AA, n.s., 16: 269-287, 1914); and the terms for Cochiti recorded by Esther Schiff Goldfrank (*Social and Ceremonial Organization of Cochiti*, AAA-M 33, 1927). Available published records are: R. H. Lowie, *Notes on Hopi Clans, and Hopi Kinship*, AMNH-AP 30, pts. 6 and 7, 1929; A. L. Kroeber, *Zuñi Kin and Clan*, AMNH-AP 18, pt. 2, 1917; E. C. Parsons, *Laguna Genealogies*, AMNH-AP 19, pt. 5, 1923; E. C. Parsons, *Further Notes on Isleta*, AA, n.s., 23: 149-153, 1921; E. C. Parsons, *Pueblo of Jemez*, Publ. Department of Archaeology, Phillips Academy, Andover, 1925; J. P. Harrington, *Tewa Relationship Terms*, AA, n.s., 14: 472-498, 1912; E. C. Parsons, *Social Organization of the Tewa in New Mexico*, AAA-M 36, 1929.

⁶ Kroeber, 60.

TABLE 1. PUEBLO KINSHIP TERMS *

	Hopi	Zuni	Acoma	Laguna	Keres		Cochiti	Isleta	Tewa		Jemez	Taos	
					Sin Felipe	Santo Domingo			Hano	Northern Tewa ^a			
Mother	ingóo (L, 'ina'ó') (yaya, voc.)	tsiya	naíya	naíya	s'ánaíya (yaya, w.'s voc.; ya, m.'s voc.) also father's s.	s'ánaíya (yaya, voc.) also father's s.	yaya	inké (nana, voc.)	jija ¹	jija ² dýiya, nuya, djiya	tse'e (des.) iya (voc.)	a'ne'ána (des.) laú (voc.)	
Mother's sister	yayahóya (little)	also hashi, m.'s older s. tsilo, m.'s younger s.	(also father's s.)	(yaya, child's voc.) voc., father's s.				inkechei, w. sp. (ke'chu, voc.)	ka'je (older s.) ko'o (younger s.)	kaíyá, ka'ye (older s.) ko'o (younger s.)		(?) an'á'ína also a'lamena (des.); fame (voc.)	
Reciprocal	ííu (child) L, ití'i-mána (daughter)	k'yatsekyi (girl) áktsekyi (boy)	s'amaak (my girl) s'amuti (my boy)	s'i yach (my child) s'amaak (my girl) s'amuti (my boy) shachu	s'áwishe, s'áwashe (my child) s'amaak s'amuti ^a	s'áwishe s'amaak s'áwishe	samak (obs.) sawushe	iníuwe'i (imPyuwe'i), w. inuwe'i, m. inawawe'i (recip. to mother's s.)	'e (child) ko'o'e ka'je	'e (child) ko'o'e	ki (child) achi (boy)	an'wái, son (des., voc.) an'wúkai, daughter (puu, voc.)	
Stepmother		iniha (also father's brother's wife, wife of cousin of older generation)	naíya	naíya s'anaiyadjanishe, shgunayu, or naíya			yaya			kwa, prefix to denote step-relationship	wigi, veba, prefix to denote step-relationship		
Father	inaá (naá, tata, voc.)	tachu	naishdia	naishdyi'ya shanaíyí (obs., ceremonial)	s'ánaish'yé/s'ánaish' umú', voc., tata, child's or woman's voc.	s'anashdyá ^a (omú, man's voc.) s'anashdyá ^a (tata, woman's voc.) tata, father's brother	umu, m. sp. wawa (one case) s'anashdyá ^a w. sp. dada nyenye (one case)	inkai (nkai) (tata, voc.)	tada also father's brother tutu'uq' (obs.)	tara: tata: to father's brother, elder brother, or any senior kinsman tú'ínu t'ono, tunu	toé witata (any kinsman, mat. or pat., older or younger)	an'tom'ána (des.) t'it'á (voc.) an'tolona (des.) tolo (voc.) } father uncle	
Reciprocal	itii	cha'le (child) k'yatsekyi áktsekyi	s'amaak s'amuti	waashche (child of clan, not used) s'amaak' s'amuti shachi (obs., cer.)	s'áwishe s'amaak s'amuti ^a	s'amaak s'áwishe	sawushe	iníuwe'i, w. inuwe'i, m.	'e	'e tu'e	ki achi, male kishyue, youth	anowai, son (des., voc.) an'wúkai, daughter (puu, voc.)	
Mother's mother	isuu (suu, su'su) (L, iso'ó)	hota	dyiau'', w. sp. papa, m. sp.	gyiau'', w. sp. pá pa, m. sp.	s'át'aó (s'át'aáú'), w. sp. (t'áú, t'ááú, voc.) s'ápapa (papa, voc.), m. sp.	s'át'aó, w. sp. s'ápapa, m. sp.	da'ó, w. sp. sababa, m. sp.	chi'i	saja	sa ^a ja saiya (S. J.) jiya kwiyo (S. C.)	olu	an'tfona (des.) lito (voc.)	
Reciprocal	imoyi	hota (grandd.) nana (grands.)	dyiau'' (grandd.) papa (grands.)	gyiau'' (grandd.) pá pa (grands.)	s'át'aó (grandd.) (t'áú, voc.) s'ápapa (grands.) (papa)	s'át'aó (grandd.) s'ápapa (grands.)	da'ó (grandd.) sababa (grands.)	maku	saja'e	sa ^a ja'e	meku	an'mák'óna (des.) mak'u (voc.)	
Father's mother	isuu (suu, su'su)	wowa	dyiau'', w. sp. papa, m. sp.	gyiau'', w. sp. pá pa, m. sp.	s'át'aó (t'aó), w. sp. s'ápapa (papa), m. sp.	s'át'aó, w. sp. s'ápapa, m. sp.	da'ó, w. sp. sababa, m. sp.	infure (infurei) (luru, voc.)	kuku (voc. also saja)	sa ^a ja saiya (S. J.) jiya kwiyo (S. C.)	dydyó	an'fona (des.) lito (voc.)	
Reciprocal	imóyi	wowa nana	dyiau'' (grandd.) papa (grands.)	gyiau'' (grandd.) pá pa (grands.)	s'át'aó (t'aó) (grandd.) s'ápapa (papa) (grands.)	s'át'aó (grandd.) s'ápapa (grands.)	da'ó (grandd.) sababa (grands.)	maku	ku'e	sa ^a ja'e	meku	an'mák'óna (des.) mak'u (voc.)	
Mother's father	ikwaa (papa, child's voc.)	nana	papa, w. sp. nana, m. sp.	pá pa, w. sp. nana, m. sp.	s'ápapa (papa), w. sp. s'amumú (s'amumú), m. sp. (mumú, voc.)	s'ápapa, w. sp. s'amumú, m. sp.	sababa, w. sp. mumu, m. sp.	inte'i (te'e, voc.)	t'ete	t'ete t'et'e (S. J.) tasendo (S. C.)	toholo toli, child's voc. vela, m. sp.	an'tahuna (des.) taluli (voc.)	
Reciprocal	imoyi	hota (grandd.) nana (grands.)	papa (grandd.) nana (grands.)	pá pa (grandd.) nana (grands.)	s'ápapa (papa) (grandd.) s'amumú (mumú) (grands.)	s'ápapa (grandd.) s'amumú (grands.)	sababa (grandd.) mumu (grands.)	maku	t'ete'e	t'ete'e	meku achi, male	an'mák'óna (des.) mak'u (voc.)	
Father's father	ikwaa (papa)	nana	papa, w. sp. nana, m. sp.	pá pa, w. sp. nana, m. sp.	s'ápapa (papa), w. sp. s'amumú (mumú), m. sp.	s'ápapa, w. sp. s'amumú, m. sp.	sababa, w. sp. mumu, m. sp.	inte'i (te'e, voc.)	t'ete	t'ete t'et'e (S. J.) tasendo (S. C.)	toholo	an'tahuna (des.) taluli (voc.)	
Reciprocal	imoyi	hota (grandd.) nana (grands.)	papa (grandd.) nana (grands.)	pá pa (grandd.) nana (grands.)	s'ápapa (papa), w. sp. s'amumú (mumú), m. sp.	s'ápapa (grandd.) s'amumú (grands.)	sababa (grandd.) mumu (grands.)	maku	t'ete'e	t'ete'e	meku	an'mák'óna (des.) mak'u (voc.)	
Mother's mother's mother	kyuata (great grandmother)	Compound descriptive term	naíya		Grandparent terms		da'ó, w. sp. sababa, m. sp.		papa	papasa ^a ja (also for other great grandmothers)	papa saiya (S. J.) saiyá (S. C.)	wigi olo (also for other great grandmothers)	taluhlea
Reciprocal		Compound descriptive term	s'amaak s'amuti		Grandparent reciprocals		da'ó (great grandd.) sababa (great grands.)		papa'e	papasa ^a ja'e (also for other great grandchildren)	wigi meku		
Mother's mother's father	yavaana (great grandfather)	Compound descriptive term	naishdia (father's father's father)		Grandparent terms		sababa, w. sp. mumu, m. sp.		papa also mother's father's father; father's father's mother	papa, papat'ete (also for other great grandfathers)	papat'et'e (S. J.) t'et'e (S. C.)	wigi toholó	
Reciprocal		Compound descriptive term	s'amaak s'amuti		Grandparent reciprocals		sababa (great grandd.) mumu (great grands.)		papa'e	papa'e; papat'ete'e (also for other great grandchildren)			
Older sister, w. sp.	ikoka (L, ieqóqá)	kyawu	shaau' (gaaú', voc.)	gaauu' (au')	shkashgau sóshi, saúshi	s'at'aóna (t'aóná, voc.)	táo, sooshe; da'óna	intute'i (tutu, voc.)	kaka ka'an, obs.	pa ^a re	ko'ó	an't'ut'ina (des.) t'uto (voc.)	
Younger sister, w. sp.	itúrpku (L, ito'pqué)	hani	shaau' (gaaú', voc.)	gaauu' (au')	shkashgau sóshi; saúshi	s'at'aóna (t'aóná, voc.)	táo, sooshe; da'óna	imp'eché (imbachuwé'i) (p'echu (bachu), voc.)	tije	tiú	p'áé	an'pafuna (des.) ope' (voc.)	
Older sister, m. sp.	ikoka	kyawu	s'akuich (chichi, voc.)	ákwi	s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	intute'i (tutu, voc.)	kaka (ka'an)	pa ^a re	ko'ó	an't'ut'ina (des.) t'uto (voc.)	
Younger sister, m. sp.	isiwa	ikyina	s'akuich (chichi, voc.)	ákwi	s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	ink'awuwe'i (ink'awemuwe'i) (kwimui, voc.)	tije	ti'ú	p'áé	an'pafuna (des.) ope' (voc.)	
Older brother, w. sp.	ipapa	papa	s'auwach (chichi, voc.)	sh'gauwa (auwa)	s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	impape'i (papa, voc.)	páp'i	pa ^a re	p'apo	an'pápana (des.) papa (voc.)	
Younger brother, w. sp.	itúrpku	hani	s'auwach (chichi, voc.)	sh'gauwa (auwa)	s'ameme (meme, voc.)	s'ameme (meme, voc.)	meme	imp'aiyuwe'i (p'ayu, payó, voc.)	tije	ti'ú	p'eto	an'páina (des.) úso (voc.)	
Older brother, m. sp.	ipapa	papa	s'atiuma (tfuma, voc.)	t'úme umú	s'atiumú (tyumú, voc.)	s'atiumi (tyumi, voc.)	chuchumi sad'umushe	impape'i (papa, voc.)	páp'i	pa ^a re	p'apo	an'pápana (des.) papa (voc.)	
Younger brother, m. sp.	itúrpku	suwe	s'atiuma (tfuma, voc.)	t'úme (umú)	s'atiumú (tyumú, voc.)	s'atiumi (tyumi, voc.)	chuchumi sad'umushe	imp'aiyuwe'i (p'ayu, voc.)	tije	ti'ú	p'eto	an'páina (des.) úso (voc.)	
Mother's brother, w. sp.	taa (L, Itahá)	kyakya		s'amuti	s'ányenye (nyenye, voc.)	s'ányenye	nyenye also s'anashdyá ^a , dada	inneme'i (meme, voc.) also father's brother	mámæ	t'ú'nu meme	tomu	an'mina (des.) mumi (voc.)	
Reciprocal	itiwaiya (L, ití'waaya)	kyase		naíya	s'ányenye (nyenye, voc.)	s'ányenye	nyenye sawushe	inch'unuwe'i (ch'unu, voc.)	mámæ'e	tu'e		an'kiluna (des.) kilu (voc.)	
Mother's brother, m. sp.	taa	kyakya	s'anawe (anawe, voc.)	anawe	s'anawá	s'anawa	umu wawa, awa anawa, anawashe	inneme'i (meme, voc.) also father's brother	mámæ	tu ^a nu meme	tomu	an'mina (des.) mumi (voc.)	
Reciprocal	itiwaiya	kyase	s'anawe (anawe, voc.)	anawe	s'anawá	s'anawa	sawushe wawa, awa anawa, anawashe	inch'unuwe'i (ch'unu, voc.)	mámæ'e	tu ^a nu	tomu	an'kiluna (des.) kilu (voc.)	
Mother's mother's brother	papaya			sh'gauwa, w. sp. umú, m. sp.			sababa, w. sp.		p'ep'e; rarely papa	tu ^a nu (also other grand-uncles)	tomu		
Reciprocal	kakaoya turpkuya			ákwi, w. umú, m.			sababa		p'ep'e (pe'e'e, obs.) papa'e	tu'e			
Father's sister	ikyaa L, ik'á'á; iso'ó, (eldest sister)	kuku	naíya	k'úya (naíya, more usual voc.)	s'ánaíya	s'ákwishe; s'ákuya	yaya	inkiwe'i (kiwú; ky'úú, voc.) also mother's sister (aiya, aunt)	ki ^a u	ko'ó ki'i	chi'i	an'ána (des.) fame' (voc.)	
Reciprocal	itii L., imóyi	eye, w. tale, m.	s'amaak s'amuti	iyach (s'amaak s'amuti)	s'áwishe (s'awashe) s'akoyá'yáme (collective)		sawushe	inch'avewe'i, w. iníuwe'i, m. chabe, junior kins- woman, w. sp.	nabi'e kwijo (my lady child) nabi'e sen (my man child)	ko'ó'e		an'kiluna (des.) kilu (voc.)	
Parallel cousins	Sister-brother terms	Sister-brother terms	Sister-brother terms	Sister-brother terms	Sister-brother terms		Sister-brother terms		Sister-brother terms ^a		Sister-brother terms		
Mother's brother's daughter, w. sp.	itii (?) L., imó'yi	eye		gyiau''			táo; sooshe		nabi'e kwijo				
Father's sister's daughter, w. sp.	ikyaa	kuku		gyiau'' (s'ak'úya, des.)			táo; sooshe		ki ^a u				
Mother's brother's son, m. sp.	imomo (?) L., ití'i	aktsekyi		s'amuti			wawa sanawa chuchumi sad'umushe		'e				
Father's sister's son, m. sp.	inaa (inaáhoya)	tachu		naishdyi'ya			wawa sanawa chuchumi sad'umushe		tada				
Mother's brother's son, w. sp.	imóyi	tale		pá'pa			meme nyenye		nabi'e sen				
Father's sister's daughter, m. sp.	ikyaa	kuku		pá'pa (s'ak'úya, des.)			meme nyenye		ki ^a u				
Father's sister's son, w. sp.	inaá (inaáhoya)	tachu		naishdyi'ya			meme		tada				
Mother's brother's daughter, m. sp.	itii	k'yatsekyi		s'amaák'			meme		'e				
Male connection by marriage; kin of wife	mounao L., imo'ona'á'ó	talakyi	wati	wati	wati	wat'i	wat'i	insooiwe'i	sojingi	soning	pengshyu	an'taana (des.) taa (voc.)	
Female connection by marriage; kin of husband	mówi L., imo'úwi	ulani	piye	piye	biya	biya	bi'hia	inyewe'i	sa'i	sa'e sa'i (S. J.) sa'e (S. C.)	pengya	an'tseena (des.) séaye (voc.)	
Other affinity terms								int'arawei, parent-in-law, child-in-law		yakwiyó, mother-in-law; yasendo, father-in-law; ya'a, sister or brother of spouse; t'at'a, husband of k'i; nana, wife of meme			
Wife	inoma				s'auk'ó	s'auk'ú	sok'ó	inliowe'i (my old woman)	nabi son (my mate), ja'a (obs.)		ho'é	an'itona	
Husband	ikonya (L, qúnaya)				s'itroshtse (s'a'd'esh'e)	s'drish'e	satrushe	insóawe'i	son		peé	an'ulilina	

* In a large number of instances diacritical marks have been omitted, due to the limitations of the printers, and the reader with linguistic interest must be referred to the original publication of the terms in question.

1. L. = Lowie.

2. y.

3. Mother's sister's son, w. sp.—mámæ, if senior, ko'ó'e, if junior; mother's sister's daughter, w. sp.—ko'ó, if senior, mámæ'e, if junior; mother's sister's son, m. sp.—mámæ, if senior, mámæ'e, if junior; mother's sister's daughter, m. sp.—ko'ó, if senior, mámæ'e, if junior.

4. First column, Harrington, second, Parsons.

tinctively; but in the other Keresan towns there is no distinctive term for the father's sister. She is classified with mother and mother's sister. Consistently, in these towns cross-cousins are said to be called like parallel cousins, i.e., by the sister-brother terms. At Taos there is the same term for father's sister and for mother's sister, although the aunt term appears to be applied more distinctively to father's sister. All the foregoing discriminations are classified in tables 2 and 3.

TABLE 2. DIFFERENTIATION IN FORKING

<i>Maternal and paternal grandmother</i>		<i>Maternal and paternal uncle</i>		<i>Maternal and paternal aunt</i>	
Dis-	Not	Dis-	Not	Dis-	Not
tinguished	distinguished	tinguished	distinguished	tinguished	distinguished
Zuñi	Hopi	Hopi	Cochiti	Hopi	Keres
Isleta	Keres	Zuñi	(partially,	Zuñi	Laguna and
Hano	Northern	Keres	one case)	Isleta	Santo Domingo
Jemez	Tewa	Isleta	Taos	Tewa	(partially
	Taos	Hano	(partially)	Jemez	excepted)
		Northern		Laguna	Taos
		Tewa		and Santo	(partially)
		(partially)		Domingo	
		Jemez		(partially)	
		Taos (partially)			

TABLE 3. DIFFERENTIATION IN MERGING

<i>Mother and mother's sister</i>		<i>Father and father's brother</i>	
Same term	Different term	Same term	Different term
Hopi, Keres,	Isleta, Tewa, Zuñi,	Hopi, Zuñi, Keres,	Northern Tewa.
Zuñi (partially),	(partially), Taos	Isleta, Hano	Hano (obs.), Cochiti
Jemez	(partially)		(partially), Jemez,
			Taos

On the whole, with some striking exceptions, the expressions of both forking and merging principles correspond fairly well in degree to the varying evaluation of clanship in the different tribes, from its peak in Tusayan to its vanishing point among Tanoans. The exceptions are a distinctive term for mother's sister at Zuñi, the lack of a distinctive term for father's sister among the Eastern Keres, the lack of distinctive terms among the

highly beclanned Hopi for maternal and paternal grandmother,⁷ and the presence of such terms at Jemez where clanship is of comparatively little importance, and where, it should also be noted, the surrounding towns do not apply the forking principle to grandmothers.

MOIETY

We noted that in some cases clanship is patrilineal among the Northern Tewa. Their obscurely mixed system of clanship I put down to a clash between their pronounced patrilineal moiety and the matrilineal clanship they have borrowed from the Keres.

As well as I can interpret the very confused and none too ample data, the existence of the patrilineal moiety among the Tewa has had no direct effect upon their kinship nomenclature.

SEX

There are some marked variations in expressing the category of sex. The sex of the person spoken to or of is not expressed in any of the reciprocal terms of the Tewa, since these sexless reciprocals are formed by the suffix *-e*, a diminutive. In the other pueblos the sex of the person spoken to is expressed or considered in all cases except in the terms for offspring, for grandchildren, in some reciprocals to mother's brother, and in certain terms for younger sister or brother. (See table 4.) Throughout, Isleta and Taos excepted, the term "child" is used instead of "daughter" or "son." Since among the Keres, the father's sister uses the term for "child," she, too, of course fails to distinguish between niece and nephew. Elsewhere she does distinguish them with separate terms. Father's sister and parents use the term "child," but at Zuñi and among the Keres of Acoma, Laguna, and San Felipe they also use the terms "my girl" and "my boy," and thus introduce the sex distinction. At Santo Domingo and Cochiti "my girl" is used, but not "my boy." On the other hand, at Jemez the terms for boy or youth are used, not those for girl or maiden. The Hopi, the peoples of Isleta, Jemez, and Taos have but one term for granddaughter or grandson. At Zuñi, Isleta, and Taos the mother's brother addresses both niece and nephew by the same term. Among the Hopi and at Zuñi, a female calls both younger sister and younger brother by the same term. at Hano, both female and male have an identical term for their junior sister or brother, among Northern Tewa both female and male have an identical term for senior sister or brother.

⁷ As Lowie points out, this lack of bifurcation is the more singular as distinctive terms for a maternal and paternal grandmother is a trait of Shoshonean nomenclature. (Hopi Kinship, 379.)

Among Northern Tewa neither the sex of the person addressed nor of the speaker finds expression in the sister-brother terms.

TABLE 4. SEX

<i>Sex of person addressed disregarded</i>	<i>Sex of speaker expressed</i>	<i>Opposition between sexes expressed</i>
General, excepting Isleta and Taos, in daughter son terms; Tewa, in reciprocals to juniors; Hopi, Jemez, Tanoans, in grand-d., grand-s terms; Zuñi, Isleta, Taos, in niece, nephew terms; Hano, in junior sister, brother terms; Northern Tewa, in sister, brother terms	Eastern Keres, in voc for father; Cochiti, in voc and des. for father, ⁸ Keres, in mother's brother term, in brother, sister terms; Hopi, Zuñi, Isleta, in man's term for younger sister; Zuñi, in man's term for younger brother	Keres, Zuñi (one exception) in grandparent, grandchild terms

Among the other peoples, what of distinctions based on the sex of the speaker and on the principle of sameness or opposition of sex between the speaker and the person addressed? If we consider the first category apart from the second, we find it expressed in certain terms for parents, for mother's brother, and for younger sister, a male speaking. At San Felipe a woman's vocative for mother is *yaya*, a man's vocative is said to be *ya*. (As this distinction was recorded only from one informant, it is possibly merely the usage of one family.) Among all the Eastern Keres the woman's vocative for father (and father's brother) is different from the man's vocative. At Cochiti the descriptive term is also different. Among all the Keres a woman's term for mother's brother is different from a man's term. Among Hopi, and at Zuñi and Isleta, a man has a distinctive term for his younger sister, and at Zuñi a man has also a distinctive term for his younger brother. Among the Keres all the sister-brother terms vary with the sex of the speaker. The principle of sameness or opposition of sex *per se* is not found at Isleta, Jemez, or Taos, or among the Hopi or Tewa, it occurs throughout the grandparent terms among the Keres and, with one modification, at Zuñi. In the application of the category of sex to the nomenclatures there are obviously considerable variations.

⁸ Cf. Yuman usage (E. W. Gifford, *Californian Kinship Terminologies*, UC-PAAE 18: 123-4, 1922).

There is a striking uniformity in terms for marriage connections; throughout, there are two specific terms, one for the male connection by marriage, one for the female. These terms are used reciprocally, among the Keres and at Hano as reflexives. At Isleta there is a reciprocal for parent-in-law, child-in-law, and specific terms for sister-in-law and brother-in-law, which may be merely the terms for male or female connection by marriage used differently by different informants. Among the Northern Tewa there is a term for the sister or brother of the spouse⁹ and etymologically related terms for mother-in-law and father-in-law. Also a specific term is applied to the wife of the mother's brother and at San Juan to the husband of the father's sister. Throughout the Pueblo all affinity terms are used for the most part descriptively; in address the term used is the one used by the spouse or corresponding to that applied to the connecting relative.

Terms of affinity have not been affected among the Eastern Pueblo, as far as I can see, by the change in their theoretical attitude toward marriage stability as induced by Catholicism. Naturally, the degree of permanency in marriage does not affect affinity terms, terms for step relations, as does the form of marriage, e.g., polygyny. No Pueblo would refer to a step parent as "your husband" or "that woman" as do for example the Kiowa.

With one peculiar exception at Zuñi, there is no direct indication, in the nomenclature, of marriage choices among relatives by consanguinity or affinity. At Zuñi the term for stepmother and for father's brother's wife and wife of cousin (paternal?) of an older generation is identical. There is nothing, either in Zuñi custom or folklore, to corroborate this suggestion of a levirate. Indirectly or etymologically, there are suggestions of cross-cousin marriage at Zuñi and perhaps among the Hopi. In custom there are some suggestions of sometime cross-cousin marriage among the Hopi,¹⁰ at Hano,¹¹ and at Laguna. At Laguna I was told explicitly that to use the reciprocal of father's sister's daughter and mother's brother's son was tantamount to using a wife-husband term.

SENIORITY

Among all the tribes the principle of seniority finds expression throughout the sister-brother terms, except among the Keres. (See table 5.) Among the Northern Tewa and at Zuñi, there are also special terms for the older and younger sister of the mother, and compound, descriptive terms at Zuñi carry out the principle in a notable degree. At Hano, too, the principle is

⁹ Same as obsolete term for wife at Hano. (Freire-Marecco, 280.)

¹⁰ E. C. Parsons, *Getting Married on First Mesa*, Scientific Monthly, 264-265, 1921.

¹¹ Freire-Marecco, 286-287.

much observed, not only between actual sisters and brothers, but, as at Zuñi, between parallel cousins. In the case of cross-cousins at Zuñi the descendants of a sister are reckoned senior to the descendants of a brother, and so they are among the Hopi, at Laguna, and at Hano,¹² since the father's sister's daughter and son are given aunt and father terms. But in all these cases a principle of clanship, I believe, rather than of seniority¹³ is involved.¹⁴ At Taos the seniority or age principle is conspicuous *per se* since senior cousins are given the aunt-uncle terms, and junior cousins their reciprocals. In Keresan, there are descriptive terms for the oldest or youngest in the family and the terms are used instead of personal names, much as our word junior is used, or, in Portuguese, *caude* (tail). Nawaí is a Keresan term of seniority which is applied to the eldest member of the clan or of a kin connection, somewhat as the term ka'je, mother's older sister, is used toward a female elder at Hano.

TABLE 5. PRINCIPLE OF SENIORITY

<i>Aunt-uncle</i>	<i>Sister-brother</i>	<i>Cousins</i>
Zuñi, mother's sisters, and in compound terms; Northern Tewa, mother's sisters; Santa Clara, uncle	General, except Keres	Zuñi, Hopi, Laguna, Hano, descendants of sister senior to descendants of brother; Taos, in relative ages of speaker and cousin spoken to; general, where sister-brother terms are used, involving the principle

What conclusions are to be drawn from these comparisons? First, a conclusion that has been arrived at in several studies of other Indian peoples, that although the social organization finds expression by and large in kinship nomenclature, the tie between organization and nomenclature is elastic. Nomenclature may vary considerably without any variation in organization, and *vice versa*. Take the Hopi data. Clanship is expressed in the

¹² As among Crow and Hidatsa. Also among Muskogean and Pawnee (Lowie, *Kinship Systems of Crow and Hidatsa*, ICA 19: 341, 1917). Also among the Caddo (Parsons ms.).

¹³ But among the Hopi, Lowie noted the application of the grandmother term to the father's *eldest* sister.

¹⁴ Compare Lowie, *Hopi Kinship*, 380. It seems curious, however, from the point of view of clanship, that the classification of father's sister and father's sister's daughter prevails among the Northern Tewa and even at clanless Taos, although here it is made between father's sister and senior female cousin. It is tempting to speculate that in this general usage for the term of the paternal kinswoman as well as in the great importance of the "aunt" in ceremonial, we have an effect of the patrilineal moiety. But see Gifford, 282.

cousin nomenclature of the Hopi as in that of Zuñi or of the Keres or of Hano, but although clanship is a more significant factor in Tusayan life than, let us say, at Zuñi, among the Hopi, unlike at Zuñi, clanship finds no expression in grandparent terminology—mother's mother and father's mother must belong to different clans—yet for these relatives there is an identical term. Again at clanless Isleta and clanless Taos there is a distinctive term for father's sister,¹⁵ a term some of the beclanned Keres lack. The variations in the expressions of the category of sex afford other illustrations of variability in nomenclature with homogeneity in organization. On the other hand, were we to consider, in view of the maternal clan of the West and householding there by women, and, we may add, the greater prominence of women in ceremonial life, that the female sex is of more consequence toward the West, just as, in view of the patrilineal moiety of the Northeast and householding by men and the more exclusive control of the ceremonial life by men, were we to consider the male sex more important in the Northeast, we would look in vain for any expression of these distinctions in the nomenclatures.

Our second generalization is that a given principle of classification may preclude another principle of classification—again without any actual differentiation in the social organization. Clanship is well developed among the Western Keres, but it may find no expression in grandparent terminology because of the predominance of the principle of sameness or opposition of sex. Among the Tewa the principle of reciprocity and at Taos the principle of seniority are developed in a way to preclude indication of the sex of the person addressed.

Plainly enough this reciprocity system of the Tewa is an outcome of language, without connection with social organization. And in this case of language interfering with the expression of a fundamental social category we have an illustration of our third generalization, namely that some of the differentiation in Pueblo nomenclature is purely linguistic,¹⁶ determined merely by linguistic principle or even vagary, by such a linguistic accident as a borrowed term with its effect on other terms. A most striking instance is afforded at Laguna in the effect of the use of the term, *s'amuiti*, upon the nomenclature. This term—my boy, my kinsman, my son—is not used, we note, at Santo Domingo or Cochiti. Its use as son at Laguna leads to the anomalous application of the term for mother to a man's sister's daughter. Still another Laguna variant tempts to linguistic interpretation—*umu* means a man's brother at Laguna, whereas among Eastern Keres *umu* means

¹⁵ Also at Sandia. (Parsons, *Further Notes on Isleta*, 152.)

¹⁶ Compare Lowie, *Kinship Systems of Crow and Hidatsa*, 340-343, 1917.

a man's father. Again must we not infer, given the same conditions of household life among the Keres as elsewhere, that the lack of seniority terms is an accident of language, unless it is perhaps an outcome of conflict between the principle of seniority and the principle of sameness or opposition of sex where the former principle was worsted? Still again, given the same conditions of life it is difficult to see in the occurrence at Zuñi, Isleta, and among the Hopi of a specific term for a man's younger sister anything but a linguistic expression. In fact I would go so far as to suggest that the application to Pueblo nomenclature at large¹⁷ of the principle of seniority is little more than a linguistic habit or convenience among a people inclined to avoid the use of personal names.

The application of the principle of seniority in some of the uncle-aunt classes in the West through compound terms such as "big father" or "little mother" illustrates the need of a close knowledge of prevailing linguistic usage in considering kinship terms. Actual terms do not tell the whole story. Through the use of descriptive or compound terms a habit of mind may find as full a satisfaction as through specific terms.

Again in study of borrowed terms knowledge of the language in general is necessary, indispensable in fact. There are to be observed in table 1 (p. 380) a few outstanding, simple cases of borrowed terms—*nana* for grandfather at Acoma and Laguna is obviously borrowed from Zuñi, and the Hano term for older sister appears to be borrowed from the Hopi—but to understand such a change as that in application of the term *umu* from "father" among Eastern Keres to "elder brother" among Western Keres, etymological insight is called for. When the borrowed term for grandfather, *nana*, displaced the term *s'omumu* (*mumu*), was the term *umu* for father likewise, at Laguna, displaced? Without more etymological knowledge than is as yet available, this question, together with other variations in the Keresan terms given in table 6, cannot be analyzed.

Table 6 illustrates not only the call upon etymology, but with table 7 a curious although not unfamiliar kind of distribution—the same word used in different application in different groups. Of this usage a still wider observation may be made in the case of the word *meme*. Among the Eastern Keres, it is a brother-sister reciprocal. At Hano, San Juan, Isleta, and Taos it is used for mother's brother, and at Tesuque for father's brother. At Santa Clara it is applied to the younger brother of father or mother and at Nambé to the brother of father or mother, i.e., uncle. *Papa* is another word differently applied, meaning grandparent-grandchild between opposite sexes, among Keres; grandfather, among Hopi—also older brother; older

¹⁷ Hopi excepted.

brother, at Zuñi, Isleta, and Taos. Probably the slightly different Jemez word for older brother is to be identified with *papa*, and possibly even the Tewa older brother term. *Nana* means at Zuñi grandfather, grandson; at Acoma and Laguna, it is a grandfather-grandson reciprocal; at Isleta, it is vocative¹⁸ for mother, a borrowed Spanish term; and at San Juan it is applied to the wife of the mother's brother (*meme*) or anyone you call *meme*.

TABLE 6. KERESAN VARIANTS

	<i>Father</i>	<i>Older brother</i> (m. sp.)	<i>Mother's brother</i> (w. sp.)	<i>Father's sister</i>	<i>Older sister</i> (m. sp.)
Acoma	naishdía	s'tatiuma (tiuma)		mother term	s'akuich
Laguna	naishdyí ya	tyumě, umũ	s'amuiti	s'akúya	akwi
Santo Domingo	s'anashdy ^a (voc., omũ)	s'atyumi (tyumi)	s'anyenye	s'ákuya	s'ameme (meme)
San Felipe	s'ánaish'ye, umũ' (s'ánaish)	s'átyumũ (tyumũ)	s'ányenye (nyenye)	s'akwishe	s'ameme (meme)
Cochiti	s'anashtush, w. sp., umũ, umu, m. sp.	sad'yumishe chuchumi		mother term	meme

TABLE 7. TEWAN VARIANTS

	<i>saiya</i>	<i>meme</i>	<i>tq'nq</i>	<i>ko'o</i>
San Juan	grandmother	mother's brother; husband of father's sister	father's brother	mother's younger sister
Santa Clara	great grand- mother	mother's or father's younger brother	mother's or father's older brother	mother's younger sister
Tesuque	father's mother	father's brother	father's brother	mother's younger sister
Nambé	father's mother	mother's or father's brother		mother's sister

¹⁸ Used descriptively at Sandia.

In borrowing the Zuñi term for grandfather, grandson, the Western Keres have fitted it into their reciprocity pattern, i.e., they do not apply the term to grandfather, woman speaking. Again the Eastern Keres make a reciprocal of that rover term, *meme*. At Santa Clara, where reciprocity is provided for by diminutive suffix, *meme* is appropriated by the prevailing principle of seniority and applied to junior uncle. These are good instances, I think, of acculturation in nomenclature. Acculturation or other processes of variation may be looked for in kinship nomenclature among the Pueblo just as in pottery design or in ceremonial organization.

HARRISON, NEW YORK

FOR at least fifty miles around *x*,¹ it was generally known that *C*, a Shooting Chant shaman, intended to have a Night Chant held for himself. These nine-night ceremonies (the Navaho count by nights rather than by days) are primarily for the curing of sickness. Eleven Indians were independently asked what sickness *C* had. The replies were similar: he was not sick but the ceremony would mean good health for the next few years. I knew that *t* had discussed this ceremony with *C* and had given him credit to cover part of the expenses, but *t*'s reply was the same. Here, then, was verified information that a Navaho ceremony could prevent future illness. It appeared that *C* was having considerable difficulty in raising the necessary eight or nine hundred dollars for this Night Chant, and it seemed improbable that this ceremony was mere insurance. The suggestion was offered by *t* that perhaps *C* had had only three of the four ceremonies which every Navaho should have before he dies. My inquiry had now run into conjecture, and consequently I went to *C*'s hogan with a friend who spoke Navaho. After the usual half hour of talk and jokes and playing with the grandchildren, the conversation came around to the Night Chant. *C* said, very characteristically, that he did not want to have this ceremony but his family were sure that he must have it. *O* said he must have it. *M* said he must have it. (*O* and *M* are male diagnosticians² with motion-in-the-hand.) And so he will have it. These medicines and masks which he handles are too strong. Something will happen to him. Last month, he dreamed that many gods came after him. They tried to drag him away to a mountain. Many *Yei* (who are prominent in the Night Chant) were among these gods. These gods were trying to kill him. Since then, he has had this dream again and again. He asked *O* what he must do about this dream. *O* said that the medicines and masks which he handled were too strong; that the gods were trying to kill him. He must have a Night Chant. He told his dream to *M*, and this man said what *O* had said.

This dream developed into an important event in the vicinity of *x*. Many discussions were held with relatives, friends, and a trader concerning the financing of this Night Chant. Word was sent to a shaman in another part of the Reservation asking for his services. Other ceremonies would be so arranged that they might not conflict with *C*'s Chant. A team of dancers could be heard in the evening rehearsing. Five or six hundred families made

¹ Capital letters denote Navaho informants, small letters designate white informants. "x" is trading post.

² William Morgan, *Navaho Treatment of Sickness: Diagnosticians*, AA 33. 390-402.

plans to attend the ceremony. Obviously, dreams are significant factors in the everyday life of Navaho; and some discussion of the attitude of C toward this dream, and its interpretation, is necessary; the more so because of the thought processes or types of causality which C believed and used in his conversation, which has been paraphrased above.

Whether a dream is a bad dream, and hence whether something ought to be done about it, is determined, in general, by the disturbing nature of the affect which persists after the dreamer has awakened. Obviously, this was a bad dream, and, in fact, could be termed a nightmare. A Navaho seldom comments on a dream further than to say that it is good or bad; and if it is bad, he assumes that something undesirable is going to happen to him, and he must do something to forestall it (E, B, K, P). Dreams are generally warnings. In this case C consulted two diagnosticians, whose function it is to discover the cause of the dream, what is going to happen, and how to prohibit the anticipated event. Usually the dreamer feels sick by the time he comes to the diagnostician, and, consequently, unless the dream clearly reveals a cause, such as the hostility of the Yei gods in C's dream, the diagnostician, often in a trance-state, will obtain the cause of the sickness without reference to the dream. This will be discussed in connection with another dream.

C, being a shaman, was familiar with gods, dreams, and sickness, and believed that they were causally related. He was convinced that his dream was a warning, and that unless something were done, he would be sick. He was satisfied that the gods were hostile, especially the Yei, and he knew that his ceremonial paraphernalia contained powerful forces. Through physical contact and the constant proximity in his hogan of ceremonial objects, these forces could enter him, and cause him to be sick. He was certain the Yei particularly needed propitiation and the Night Chant would, therefore, be appropriate. In addition, the ceremony would rid him of these undesirable forces already in his body. Ordinarily, it is the function of diagnosticians to diagnose and prescribe, but, in this case, it is doubtful if they did more than confirm C's opinions.

This description leaves much to be desired from the white man's point of view. What caused the Yei to be hostile? What agency warned C by a dream? Suffice it to say, the explanation satisfied C. I asked no farther questions because a Navaho has plenty of answers for a persistent white man.

In the reasoning processes used by C for the interpretation of his dream, certain types of causality, also accepted and used by other Navaho informants, are evident, and require comment. Rather than add to the exten-

sive literature on mental processes by another set of arbitrary definitions, the outstanding work of Piaget will, in part, be borrowed verbatim. M. Jean Piaget has differentiated seventeen types of causality, as manifested in the thought-processes of French children. The first six of these are modified or discarded by the time the child reaches the age of eight.³ In this paper, attention will be called to these six types, which occur in connection with Navaho dream interpretation. No doubt, all of Piaget's types could be demonstrated in the general conversation of an adult Navaho. So long as dreams and other manifestations of the unconscious can produce serious physiological disturbances, these types of causality will persist, regardless of compulsory education and allied activities. So long as white doctors confine their treatment to the purely physical causes of sickness, there will remain an essential need for the tribal ceremonies, which deal directly with the psychogenic factors of sickness. This will become increasingly apparent in the subsequent pages of the present paper.

Inasmuch as the thought-processes of adult Navaho are to be described with definitions derived from the study of white children, a paragraph of warning is relevant.

Sir E. B. Tylor used the word "child-like" in describing the individuals of primitive tribes, and this word stimulated others to record numerous haphazard observations of white children, which appeared to resemble the behavior of "savages." In this paper, it is suggested that one of the properties of the mind of man is the instinctive use of certain types of causality. A study of the relative prevalence of these types, in the everyday life of the adult Navaho, would add materially to a description of these Indians, but it is to be clearly understood, that these six types are here demonstrated in matters of dream interpretation and sickness; whereas, Piaget shows the prevalence of these types in a child's assumptions about clouds, wind, bicycles, rivers, etc. To form any opinion about how "child-like" a Navaho adult is from the preliminary references in this paper would lead to extensive errata. The only permissible comparison is with the mental processes of white adults at Lourdes or of white patients in hospital wards.

Navaho myths record instructions from the gods concerning the preparation of masks which resemble the gods, and objects used by the gods in their own ceremonies. If these instructions are carried out, the objects will contain powers which can bring about specific results, and these powers or

³ It is of interest to note that Grock, the clown (with whom no other clown can stand comparison), continually uses ten of the first twelve types of causality, as defined by Piaget, either separately or in combination during his performances. The reaction of white adults to these immature thought-processes is too well known to require comment.

forces may emanate from the objects. These objects could be said to contain "mana," in so far as C's subjective attitude is concerned. Jung found at Mt. Elgon, in Africa, that mana may be the voice of the chief, or his breath, his wife, his chair, his hut. A spear, a canoe, lightning, certain trees may be mana. These different things are identical under the aspect of mana. The natives have the same attitude to them all. When mana is concerned, it does not matter what the objects are, it is only the subjective emotion that matters.⁴ C's belief that his ceremonial paraphernalia may emanate powers or forces; and especially his belief that the forces in his body, which were working to kill him, were the same forces which resembled and, in fact, were identical with the forces in his ceremonial objects demonstrates, in general, a type of causality "by participation": where

two things, between which there subsist relations of resemblance or of general affinity, are conceived as having something in common which enables them to act upon one another at a distance. . . . Air or shadows in a room emanate from air and shadows out of doors.⁵

This type of relation disappears after the age of six.

As a matter of fact, the manner in which these forces got into C's objects emphasizes a second type of causality. C's behavior, meticulously prescribed in myths, when preparing these objects, including his gestures, words and thoughts, charged them with power. This may be termed "magical causality":

The subject regards his gestures, his thoughts, or the objects he handles as charged with efficacy, thanks to the very participations which he establishes between those gestures etc., and the things around him. Thus a certain word acts upon a certain thing, . . . a certain white pebble will bring about the growth of water-lilies.⁶

Another form of causality is apparent in that C is so sure that he will have to get sick, as long as the gods intend to kill him, that he is prepared to spend eight hundred dollars in order to prevent it. This may be called a form of "moral causality" where:

the child explains the existence of a given movement or of a given feature by its necessity, but this necessity is purely moral: the clouds "must" advance in order to make night when men go to bed in order to sleep.⁷

⁴ C. G. Jung, Remarks in Zurich seminar, 1929.

⁵ Jean Piaget, *The Child's Conception of Physical Causality*, 261. New York: Harcourt Brace, 1930.

⁶ Piaget, *op. cit.*, 261.

⁷ *Ibid.*, 261.

In spite of the fact that C's dream could be termed a repetitive nightmare, he was not yet sick. This is unusual. When a Navaho wakes up after a disturbing dream, he describes his condition as "feeling sick" (B, E, P.). K said that he had more than once dreamed of falling down a canyon, and had waked up when halfway down. Each time, he had been sick the next day and continued so for several days. In such cases, if the dreamer consults a diagnostician, he asks to be cured of his sickness. The dream gives no manifest clue to the cause of his sickness, hence the diagnosis, generally revealed in a trance-state, and the prescribed cure, ignore the dream. When some spirit is the cause, P reasons that if a Chant is given to the ill-disposed spirit, this entity will withdraw its destructive influence from the dreamer's body and will not send dreams into his head.

A phase of C's dream, which portrays the gods as they are described in Navaho myths and as impersonated in the ceremonies and accompanying sand-paintings, requires a few references. It has been frequently pointed out that Navaho myths are of immediate significance in the daily lives of these Indians; in part, because portions of them are acted repeatedly during the winter. Although these ceremonies are ostensibly for the cure of sickness this is by no means their only function. Furthermore, when discussing dreams and conscious thought-processes, these myths are important and ever-present ecological factors. In the present instance, C's dream was expressed with myth material, and it has been P's experience that the shamans dream more often "about myths" than other Indians. This influence of myths on dreams, and particularly a shaman's dreams, is obviously to be expected. It is being continually demonstrated on white subjects that if they believe or are told that a certain dream means that a certain event will occur, then very frequently this dream will precede the specific event, which they had no conscious reason to predict. The simplest explanation for this seems to be that their unconscious was aware of certain "signs" of the approaching event, before their conscious mind recognized the significance of these signs. In other cases, conscious or unconscious suspicions that an event has taken place would be sufficient to cause the dream whose traditional interpretation would ordinarily foretell the event.

On the basis of these observations, it can be understood why certain dream interpretations are persistently believed. It is because the interpretation of the manifest contents of a sufficient percentage of them corroborate the facts. Nevertheless, the influence of myths and other forms of suggestion on the dreams of individuals has been casually observed, rather than defined. Needless to say, very little is known about this question of influencing the manifest contents of dreams, and one reason is that those psy-

chologists who are studying dreams do not publish what they say to their patients. All we know is that each one finds the dream symbolism with which he is familiar.

Since dreams are one aspect of an individual's psychic energy, so myths are a similar and generalized aspect of tribal energy, even though these latter derive from the dreams, trances, and conscious elaborations of individual Navaho. Therefore, when a dream contains myth material, in C's case certain gods, it becomes relevant to know what these gods symbolize. This leads directly to an analysis of the latent contents of myths and dreams, which cannot be included in this paper. On the other hand, a few comments about symbols may be introduced, which refer to a non-specific god of the Navaho who does not appear in sand-paintings and is never impersonated. C says he is the highest god, a spirit behind the sun. Presumably this god would not appear in dreams but would be known only by his manifestations. This unseen god is not emphasized by the Navaho (P, E, i, t), as the "Supreme Being" is by the "Christian" Navaho, or as Jung's Somali informant, who belonged to a Mohammedan sect, emphasized the god Chidr. This informant said that his god can appear as an ordinary man, like myself or that man there, and you know that he is Chidr; or he can appear as a light, not the light of a candle or a fire, but as a pure white light, and then you know this is Chidr; or (picking up a blade of grass) he can appear like this.⁸

The Navaho have a name for this god and he thus becomes a symbol, though a formless one. Jung has said that the real nucleus, the basic substance of symbols, consists of unconscious contents that make themselves felt, yet the conscious is unable to grasp their meaning—unable to analyze, to dissect them, to grasp their substance. They are only felt as a dim, but at the same time, a very powerful presence. People feel that they should give a name to that incomprehensible presence, and therefore they use a symbol. The symbol in itself, as a name, is a perfect futility; yet inasmuch as it designates the invisible, powerful presence, it is exceedingly powerful. It is, then, an approximate designation of an invisible and potent fact that influences man from the unconscious sphere. If it had come from the conscious sphere, then naturally it would have been analyzed and understood, and it would have lost its fascination. But, inasmuch as it is a fact, a true fact from the unconscious, which cannot be dissected on account of the inability of the conscious, therefore it remains an explicit and efficient factor that has a definite function.⁹

⁸ C. G. Jung, Remarks in Zurich seminar, winter, 1929-1930.

⁹ C. G. Jung, Remarks in Zurich seminar, spring, 1930.

These comments of Dr. Jung draw attention to the deification of subjective feelings, such as the fear of lightning, which is represented by the specific Snake-god, who controls zigzag lightning. This deification enables individuals to propitiate an entity, which represents a fear or a need. In fact, the creation of powerful emotions into symbolic images is itself a need of the human organism, and is provided for in all religions. In other words, emotions are gods when the individual cannot control them.

So far as the Navaho are concerned, they are not inclined to arrange gods or other phenomena in categories, but nevertheless when discussing dreams they had no hesitation in dividing dreams into good ones and bad ones. The after-affect of each dream determined this. If the dreamer awoke in an unpleasantly disturbed state he knew the dream was a bad one. There are exceptions. Certain dreams have come to have standardized interpretations. Such a dream does not always produce sufficient after-affect to warrant anything being done about it. But when the dreamer has had time to recollect the standardized interpretation, then the minimum after-affect is often seriously augmented. This varies with different individuals. E said that he once killed five or six bears, and then several times dreamed that bears were after him. He said that, if he had been a nervous man, he would have been worried because the older men consider the bear sacred.

That the after-affect of a dream is sometimes no criterion that a dream is good or bad may be shown from Melland's work in northern Rhodesia, where he found that "every dream has some signification." This writer reports:

To dream that one is killed by a lion means great success in the chase. . . . In this case, the dreamer goes to a Ng'anga (shaman) who interprets the dream as propitious: after which the dreamer clears a little path up the side of an anthill and models a small lion and lioness, which he places in a miniature hut at the end of the path. When he has killed anything, he takes the heart from the beast, and cooks it by this small hut so that his luck may continue.¹⁰

The after-affect of such a dream would obviously be one of fear, but it is possible that a traditional "a contrario" interpretation would allay this fear and even instill self-confidence. What seems to have happened, however, is that the dreamer was sufficiently disturbed to consult a Ng'anga, who prescribed a ritual, implying that the dream was bad, but could be converted by the ritual into a good dream. The only problem involved in this situation is that the ritual shall be sufficient, and the belief in its efficacy adequate to prevent a recurrence of the previous emotional state of fear, when the

¹⁰ Frank H. Melland, In *Witchbound Africa*, 247. London: Seeley Service, 1923.

dreamer is, in reality, hunting lions. Such a recurrence would derange his presence of mind.

On the other hand, the after-affect is sometimes "diagnosed," and the dream ignored. In the following example given by d, he states that if there were a dream involved, no one mentioned it. J had awakened with the feeling of being strangled. He consulted L, a diagnostician, who said that d's eagle had clutched at his throat, and he must have the Eagle Chant, better known as the Bead Chant, held for him. An eagle had been given to d, who kept him in a cage. This disturbed the Navaho, whose religion forbids keeping an eagle in captivity. C, a shaman, who knew the Bead Chant, happened to be in the vicinity and prepared one of the sand-paintings belonging to this ceremony. This picture contained a double row of eagles, and a ritual performance, lasting about twenty minutes, was deemed sufficient to propitiate the eagle; or, to be more exact, the spirits of all eagles. In the previous incident having to do with C's dream, the diagnosticians were asked what caused the dream. In this case, the diagnostician was asked what caused the strangling sensation. This latter is the more usual procedure, for generally the individual is sick by the time he consults the diagnostician and the immediate problem is to cure the sickness. Therefore, it is assumed that remission of symptoms means an eradication of causes and allied manifestations, such as disturbing dreams and their after-affects. To be sure, C's dream produced an after-affect of fear and consequent worry, but these, apparently, were considered by-products. The main factors were the accumulation in him of influences from hostile gods, and an inevitable sickness. In the above eagle incident, what the patient described as a feeling of being strangled was transformed by the diagnostician into a clutching of the throat; and he thought of the captive eagle. To affirm that this particular eagle could cause this clutching sensation demonstrates a "phenomenistic" type of causality; where,

two facts given together in perception, and such that no relation subsists between them except contiguity in time and space, are regarded as being connected by a relation of causality . . . Phenomenistic causality is essentially unstable (in the white child); as soon as it is established, a phenomenistic relation transforms itself into one that is animistic, dynamical, magical, etc.¹¹ . . . the causality which results from phenomenonism of this kind is not unlike that which is to be found in primitive races.¹²

Dr. o, who began his Reservation practice nineteen years ago, relates that a Navaho about eighty years old came to him with an abscess in his

¹¹ Piaget, *op. cit.*, 258.

¹² *Ibid.*, 253.

eye. This Indian said that a long time ago a deer ran close to him. Its horns brushed his eyes. For many days he could scarcely see. Recently, while chopping wood, a splinter came into his eye. He pulled it out. That night he dreamed of deer. Since then he has dreamed of deer every night. If Dr. o would stop his dreaming of deer, then his eye would get well. He was told that his eye must be taken out. He refused. He was told that if this were not done he would lose both eyes and would probably die. The Indian replied that he had lived a long time and that he did not care whether he died. Then he went away. It should be added that the probable facts are that he sought Dr. o in an effort to save anything up to a thousand dollars (the cost of a ceremony), and that he went away not to die, but to find a diagnostician.

This Navaho's exposition of his case is peculiarly characteristic of these Indians [i, o, t] and no better description of it could be offered than Piaget's conclusions, based on data concerning French children's ideas about natural laws, when they are from two to eight years old:

on the one hand, there is an absence of the desire to find logical justification for one's statements, and on the other, syncretism combines with juxtaposition to produce an excess of subjective and affective relations at the expense of logical implications.^{13,14}

No particulars are known about the earlier incident when deer "brushed his eyes." Apparently, he felt that the splinter, entering his eye, had not been due to unseen influences; and that healing would have taken place, as with other minor abrasions, had not some adverse factor intervened. This factor was his repetitive dream. Whereas, a white man would ponder about the several risks of an old man chopping wood, this Indian desired that his dream be stopped in order that the healing might proceed. His attitude indicates a type of causality, which Piaget names "finalism."

There is simply finality, without either the origins or the consequences of this finalism being noticed by the child.¹⁵

The deep and stubborn finalism of the child shows with what difficulty external reality frees itself from schemas due to internal and psychical experiences.¹⁶

It is much the same when we say, in accordance with ordinary common-sense,

¹³ Piaget, *op. cit.*, 303.

¹⁴ The substance of these words also forms a daily refrain in clinics of abnormal psychology, and certain case histories of white adults contain data indistinguishable from portions of my (unpublished) Navaho material. For instance, a sequence of symptoms in one Indian neurosis is on all fours with a certain set of symptoms which I have investigated in a white (American) adult.

¹⁵ Piaget, *op. cit.*, 259.

¹⁶ *Ibid.*, 245.

that ducks have webbed feet so as to swim better or when the child says that the river flows so as to go into the lake.¹⁷

On the other hand, if this Navaho consulted a diagnostician a cause or causes for the influences which were preventing the normal healing process would undoubtedly be revealed to him. In such cases, where an immediate plausible cause would be difficult to find, a remote cause is always available. P, in diagnosing by motion-in-the-hand, has given, as causes for a sickness, the patient's neglect to perform a proper burial. The burial took place many years before, but the Navaho have no statute of limitations operating in such matters. In these cases a "motivation" type of causality is apparent, where gods or the spirits of men revenge themselves because the subject has done something which he ought not to have done, or has omitted to do something which he should have done. Piaget states that among white children

this type of causality is no doubt the most primitive, but it is also the one that survives the longest.¹⁸

Having called attention to a few thought-processes inherent in Navaho dream interpretation, other material may be mentioned, namely, universal dreams, a ritual for coping with dream-affects, repetitive dreams, dreams of animals, death dreams, and the influence of dreams on the belief and conception of a life after death.

There are certain dreams which are common to all races wherever dreams have been studied. Among Navaho informants, the after-affects of these universal dreams are disturbing, but are minimized because others have had similar dreams and nothing serious has happened. I have no evidence that a series of customary interpretations has developed for these dreams. Sometimes they cause sickness and require diagnosis and treatment. One of the dreams belonging to this category, and which appears to be common [P, E, B, K], is the dream of falling. When B dreams of falling he sometimes spreads his arms and lands lightly. When asked what the dream meant he replied that an educated man might say that it predicted aeroplanes. He was pleased that he, himself, had thought of this explanation. He often dreams of falling from a cliff. Dreams of being lost are not uncommon [P, E]. E has dreamed that he was in a strange country and was lost. Presumably this would be a very disturbing dream because a Navaho is constantly oriented in respect to east, south, west, and north; and meticulously so in his

¹⁷ *Ibid*, 259.

¹⁸ Piaget, *op. cit.*, 258.

ceremonies. The after-affect, however, is readily dispelled by awaking in familiar surroundings. The loss of a tooth belongs to this type of dream, and is not a good dream [B, K, E]. Such dreams lend themselves unfavorably to a specific diagnosis of what caused the dream.

In case a Navaho is moderately worried about a dream, P states that he may pray at dawn in the door of his hogan, which always faces east. He may pray to the sun-god, whom C believes to be "the highest god," or he may pray before a special stone or object kept for such purposes. An interesting emphasis is thus placed upon the time of prayer, which is the moment of sunrise. Jung has previously called attention to this emphasis based on his fieldwork at Mt. Elgon. He says that the sun is called "adhista." God is called "mungu." To designate the sun as god, they say "adhista mungu." It is the sunrise, or specifically, the moment of sunrise, which is thus named. It is their particular emotion connected with sunrise. When the sun is in any other position, it is called "adhista."¹⁹

The function of the stone or object in this prayer-ritual was not investigated. Westermarck reports that in North Africa,

when a person has an evil-omened dream, he may salute a stone in the desert and tell it about the dream, then say: "O, God, bestow upon us its (the dream's) goodness and free us from its evil." Then the *bas* (impersonal force of evil) will go into the stone.²⁰

It has been pointed out that myths, particularly the acted portions, influence dreams; and these dreams, in turn, help to maintain the efficacy of the ceremonies. Likewise, there is the mutual influence of superstitions and dreams. These superstitions may be detached fragments of myths, but some undoubtedly arise like legends: an incident may become exaggerated, or a fear may be repeated to someone and thereafter assume the guise of a fact. H said that dreams about owls are not good. When he went to the mission at night, his mother would say: "Do not go. There are many owls there." In such cases, a dream and a superstition may reenforce each other, and there is always the probability that the superstition arose from a dream.

Repetitive dreams do much to strengthen the traditional beliefs concerning dreams. Considering the amount of variety in the manifest contents of dreams, this phenomenon of repetition is, indeed, remarkable, and is difficult to produce experimentally. B has had dreams that cattle were chasing him, and he always ran for a tree. Once he fell down and he was in terror because he could not get up. Once the tree sank into the ground, so that the

¹⁹ Jung, Remarks in Zurich seminar, autumn, 1929.

²⁰ Edward Westermarck, *Ritual and Belief in Morocco*, 2: 47, 1926. Macmillan.

cattle could get at him. He was frightened and woke up. Once the tree moved away with him, and he said that this was a good dream.

Dreams of vertebrates are common, and, for the most part, concern the snake, the coyote, and the bear. Apparently, in each snake there is some of the spirit of the Chief Snake; or this spirit may be in a particular snake at a certain moment, and is likely to harm an Indian by biting him or by causing him sickness, which may or may not manifest itself by a bad dream about a snake (E, P). E has many times dreamed of snakes and these, he said, were not good dreams, for "a snake always does evil." However, he adds that the spirit of a dead person does not go into a snake. Since the Chief Snake is god of zigzag lightning, an amulet which protects from this lightning will also protect the bearer from live snakes (P), but I have no evidence that such an amulet can ward off the affects of snake dreams, or prevent such dreams. The statement that a snake always does evil is of minor importance from the point of view of comparative anthropology.

Amongst the Malays to dream of being bitten by a snake portends success in love.²¹

Obviously, the interpretation of snake symbolism, as well as the secondary beliefs concerning medicine, magic, and religion, become a wilderness of variations when more than two tribes are reviewed. There is a further complication concerning vertebrates. The Origin Myth (as recorded by Washington Matthews) states that the Navaho came into this world through a hole in the earth's surface; and the spirits of the dead return through that hole to the previous world, where all are happy. "These spirits come and go to their graves" (E, P, i, t), and E says that there are skins of birds, bears, and coyotes at this hole, and evil dead spirits may put these on and visit the living. When a dream or a sickness is being diagnosed, it is therefore necessary to know whether the spirit of a deceased man or woman should be propitiated, or the spirit of a bird, bear, or coyote when only the latter appear in a dream or a trance-diagnosis. So far as the diagnostician is concerned, such complications double the ease of his diagnosis; but they also double the apprehensions of the individual Indians.

Another group of dreams might be designated as "death dreams," and concerning these there are certain well-known interpretations. Thus, if a shaman during a ceremony dreams that his patient is going to die he must leave; and another shaman must be called (P). A dream interpretation may sometimes either arise, or be confirmed, by observations of events in the ex-

²¹ Sir W. C. Clifford, *In Court and Kampong*, 189, 1897. Quoted by Ernest Crawley, *The Mystic Rose*, 232. London: Methuen, 1927.

ternal world. For example, when a Navaho dreams that he is dead, he means that in his dream he was in the next world with the spirits of the dead (B, P, E, K). To be there and to come back is not necessarily a bad dream; but if the dead beckon to the dreamer, or he shakes hands with the dead, it means that he is going to die (E, P). Such an interpretation may well be based on certain delirium observations similar to the following one, which was told by P: In a hogan ceremony, the patient asked the shaman whether he saw four men who had come in and were sitting near the door. Those present in the hogan said they did not see them. The patient reached forward to shake hands with these four men, but fell back and soon died. As an illustration of this interpretation, P dreamed that he was in the next world and a black horse came by with a feather upon his back. The feather changed to P's brother, who had long ago died, but the brother did not beckon to him, "so the dream did not mean that he would die."

Once P dreamed that he was in the spirit-world, where he was driving his sheep and goats. A great crowd of dead people were present. His goats got separated and he lost them, but he got back to earth, though he does not remember how. Getting back to earth is important, and an otherwise bad dream, which would predict death, may thus be turned into a good one. Dr. Paul Radin has previously noted that the Winnebago make this same distinction in their dreams about death (unpublished).

It is difficult to know what an individual Navaho thinks about dreaming. Questions elicited answers in abundant variety, but informants were not interested in the "how" of dreaming; and I found, like all others, that when an informant's interest begins to fade, any further questioning leads to a quicksand of insignificant "information." P stated, however, that it is generally believed that gods, spirits of deceased men and animals, as well as unfriendly Navaho (witches) may put dreams into one's head.

This paper has not only confined itself to the manifest contents of dreams, but the dreams are all "spontaneous," in contradistinction to those which coincide with some particular interval of initiation, fasting, burial, etc. Among the Navaho, spontaneous dreams are extremely important factors in everyday life, and this statement is, in general, corroborated by those who have worked on other tribes, wherever they have had an interest in such material. Contrary statements have been made, however, by certain anthropologists, among whom is the unquestioned authority, Professor Malinowski. He has written that

spontaneous dreams are not of any great importance in the life of the Trobrianders. No prophetic meaning is ascribed to ordinary dreams ²²

²² Bronislaw Malinowski, *Sexual Life of Savages*, 386. Horace Liveright, 1929.

In another volume, he writes:

dreams and day dreams are not an easy subject for study among the Melanesians of the Trobriand Islands. It is a remarkable and characteristic feature of these natives, in which they seem to differ from other savages, that they apparently dream little, have little interest in their dreams, seldom relate them spontaneously, do not regard the ordinary dreams as having any prophetic or other importance, and have no code of symbolic explanation whatever.²³

It must be added that Professor Malinowski includes under his classification of "typical," "official," "traditional," and "standardized" dreams those which may occur at any time regardless of external circumstances, provided that such dreams have a traditional interpretation. He would probably say that Navaho death dreams are not of a spontaneous type. In pursuing Professor Malinowski's classification, the distinction between spontaneous dreams and those dreams which coincide with some particular interval of initiation, fasting, burial, etc., is obliterated. It is not an important distinction if an anthropologist's work ended with primitive races. But in the study of dreams this distinction between spontaneous and official or incubation dreams remains intact among other races and is informally present today. Professor Malinowski observes that the Trobrianders seem to differ from other savages in that they apparently dream little, have little interest in their dreams, seldom relate them spontaneously, and have no code of symbolic explanation whatever. The methods used in getting these results are omitted. A general method, which has been tested and found workable among the Navaho Indians, and which is also adapted for conversation when more than one informant is present, consists in a directed discussion during which the investigator contributes his share of white men's trances, dreams, visions, superstitions, and religious and medical practices, which bear as close a resemblance as possible to their Navaho counterparts. Further than this, the thought processes and dream interpretations of white men are sometimes analogous, if not similar, to those of the adult Navaho. For example, trial and error has introduced the widespread custom of interpreting certain dreams in a way which is opposite to their manifest meaning, although, it so happens, that this "a contrario" method has gained no credence among the Navaho, at least, among the informants quoted in this paper. That certain dreams would be so interpreted is probable, because the apprehensions of an individual so often find expression in his dreams;

²³ Bronislaw Malinowski, *Sex and Repression in Savage Society*, 92. Harcourt Brace, 1927.

but inasmuch as these apprehensions are exaggerated the event, in reality, turns out otherwise. It has been stated that the Navaho have an easily accomplished ritual for coping with the causes and the results of disturbing dreams; they may pray at sunrise. If the ritual were more difficult, if the Navaho were reticent about their dreams, and if they were in the habit of neglecting their dreams, then the natural course of events would show them that many dreams indicated an opposite interpretation. Since prayer generally intervenes in the predicted or feared outcome of a dream, the commonly accepted interpretations may survive unchanged and unelaborated: dream interpretation will not tend to develop the complexity which it has in many other parts of the world.

In the preceding pages of this paper it has been indicated that informants believe their gods "go and come," and spirits of the deceased "go and come." They believe that these agencies can send dreams into one's head, and influences into one's body; but they are not inclined to say that they themselves "go and come" when they dream of being in the next world. Whether or not their spirits are mobile depends somewhat on how they are questioned. White education may have introduced the tendency to say that it is "as if" one had gone to the spirits' world in a dream.

A tentative investigation was made concerning the existence and physical appearance of the spirits of deceased Navaho. They were described in conversation as resembling "ghost-like" bodies dressed as in life, who are capable of sensing pleasure and pain, and who lead a pantomime life resembling the life on earth. In their external environment there is an absence of pain-producing factors, hence they are happy. The part which dreams fulfill in confirming these convictions and in portraying the life after death is not difficult to demonstrate. White men's dreams seldom distort friends and relatives, though these latter may appear to be doing unusual things. There is no evidence that such is not the case in Navaho dreams; and if so, it seems likely that dreams form the basis of the belief that spirits retain their earthly appearance; and that, in accordance with this belief parts of their burial customs came into being.

In discussing briefly the manifest contents of dreams, it is difficult to limit arbitrarily the ramifications of each dream, as has been done in this paper. Almost any dream serves as a point of departure for an investigation of sickness, for an exposition of related fragments of mythology (religion), and for an analysis of the dreamer by a study of the latent contents of a series of his dreams. In this paper, the manifest contents of a few selected dreams and the Navaho interpretations of these contents have served to demonstrate six types of causality in the thought processes of specified

informants: to emphasize the interdependence of certain dream interpretations with the Navaho religion; and to show that dreams are factors influencing the everyday life of these Indians, and resulting in behavior, often recorded but inadequately described in the literature.

984 MEMORIAL DRIVE
CAMBRIDGE, MASSACHUSETTS

THE ALGONKIN SEQUENCE IN NEW YORK¹

By WILLIAM A. RITCHIE

IN HISTORIC times the great Algonquian stock extended over an immense fan-shaped territory stretching from an apex on the lower western boundary of Alberta, through upper Montana, northeastward nearly to the sixtieth parallel, over all of Quebec, lower Canada, New England, the Great Lakes region, and southward through the Mississippi valley to northern Tennessee, embracing most of the district eastward through Kentucky and West Virginia to the Atlantic.

Like an island in the northeast lay the largest of the Iroquoian provinces. With New York as its center, one peninsular arm penetrated the whole interior of Pennsylvania, another intruded on northern Ohio and southern Michigan, while a third reached through lower Ontario and the St. Lawrence valley to the Gulf.²

Most of this territory, from Lake Winnipeg eastward, lies in the Eastern Woodland area and was populated by the Central Algonkin, comprising the Ojibway, Ottawa, Menomini, Sauk and Fox, Potawatomi, Peoria, Illinois, Kickapoo, Miami, Shawnee; the Siouan Winnebago; and the eastern Algonkin tribes, the Abnaki group, Micmac, New England tribes and Delaware.³

In large part the archaeological and ethnological culture areas, into which North America has been subdivided through the correlated work of many investigators, tend to coincide, yet several archaeological provinces are embraced wholly or partly in the Eastern Woodland area,⁴ the result of greater group migrations in this region than have been general elsewhere both in ancient and in comparatively recent times. The Iroquoian tribes represent a late intrusion from a southern center, and the Great Lakes area is a definite locus of intrusive mound culture, also derived from the south but at an earlier period.

The contiguous Canadian area is little known, but scattered vestiges seem attributable to the Algonkin.

In the eastern part of the Woodland area the North Atlantic province constitutes a peripheral region sheltering various Algonkin tribes until historic times, while shell-heaps and village sites prove a lengthy occupation.

¹ By permission of the Board of Commissioners, Rochester Museum of Arts and Sciences.

² J. W. Powell, *Indian Linguistic Families of America North of Mexico*, BAE-R7, 1885-86.

³ Clark Wissler, *The American Indian*, 234-237 (New York), 1922.

⁴ *Ibid.*, 364.

An old culture, too, underlies the mounds in part of the Great Lakes region, the industrial vestiges of which compare closely with recognized Algonkin forms.

Below the recent Iroquoian deposits in New York state, which is divided between the Iroquoian and the North Atlantic areas, are abundant traces of a much older occupation assignable to the Algonkin from the fact that the numerous shell-heaps about the coast line of the state preserve in unbroken continuity from bottom to top, series of bone, stone, and pottery artifacts, ranging from pre-Columbian in the lower levels to a colonial intermixture near the top. Historical records convey the fragmentary story of Dutch and Algonkin contact, affording meager descriptions of the Indians and their mode of life.⁵

Several investigators have written on the Algonkin occupation of New York, the most prominent being Skinner, Harrington, Pepper, Bolton, Finch, and Parker. The only comprehensive and synthetic treatment of the subject is by Parker,⁶ whose threefold division is followed in this paper. But the culture congeries enumerated by Parker,⁷ and later by Skinner,⁸ for each horizon have undergone some modification through recent work on several large New York sites by the writer and his colleagues under the supervision of Parker. It now seems more probable that the Algonkin of the Second Period were derived from the southeast, rather than from the west, whence they introduced the brachycranial factor, agriculture, pottery, and polished slates, while the Algonkin of the Third Period represent an internal development of those of the Second Period (with some slight "mound-builder" infiltration), to which was added the powerful influence of incoming Iroquoian tribes.

The first waves of what we may regard as Algonkin people are considered by Parker,⁹ to have pushed into the state from the west, the direction of the "apex of the fan," some thousands of years ago, being eastern detachments of some of the tribes which were milling out from the upper

⁵ E. M. Rutenber, *History of the Indian Tribes of the Hudson River*, (Albany), 1872, R. P. Bolton, *The Indians of Washington Heights*, AMNH-AP 3, 1909.

⁶ A. C. Parker, *The Archeological History of New York*, New York State Museum Bull. 46-50, 1920 (cited as *History*, hereafter), *The Algonkian Occupation of New York*, New York State Archeological Assoc., *Researches and Transac.* 4, no. 2, 1923.

⁷ Parker, *History*, 50-79; also same author, *Aboriginal Cultures and Chronology of the Genesee Country*, *Proc. Rochester Acad. Sci.*, 6, 251-255, 1929.

⁸ Alanson Skinner, *General Archaeological Criteria of Early Algonkian Culture*, in *The Algonkian Occupation of New York*, N. Y. State Arch. Assoc., *Researches and Transac.* 4: 29-41, 1923.

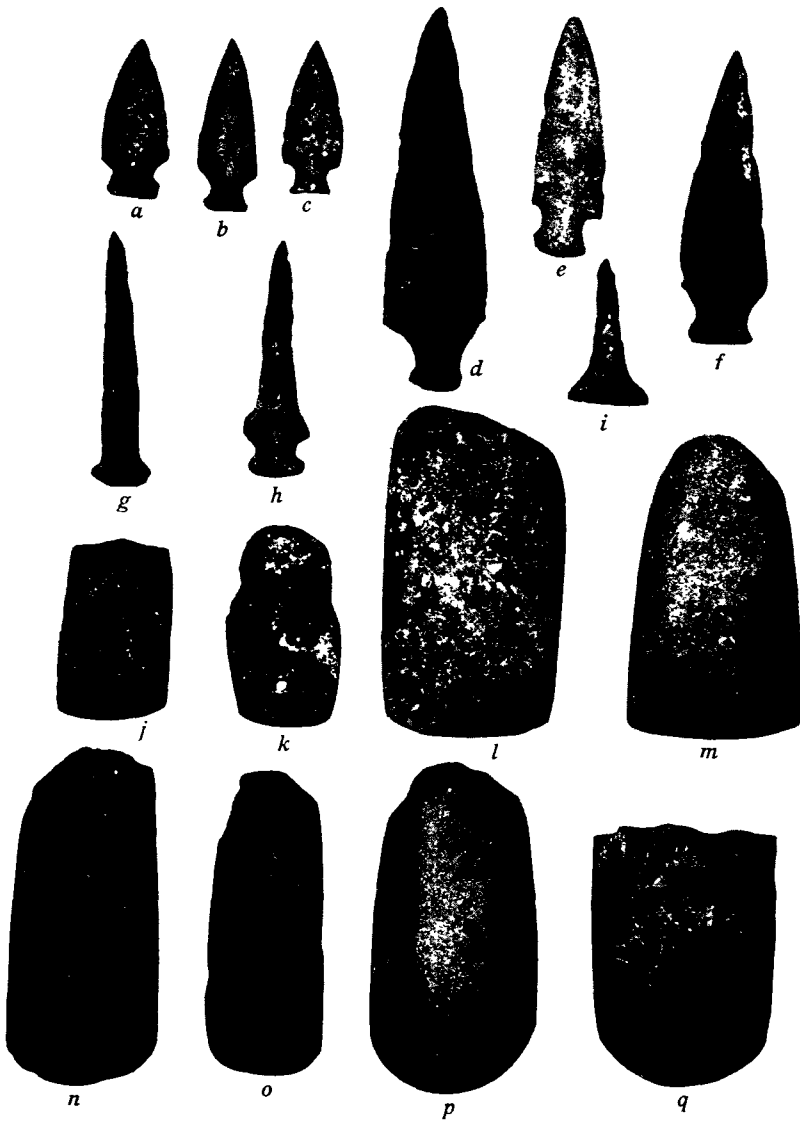
⁹ Parker, *History*, 41.

plains. Scattered desultorily over most of New York, particularly along the courses of large rivers and small lakes, are traces of this Archaic occupation. They seem to have been scattered by large nomadic bands, which often established winter camps in the level fields at the juncture of a small tributary with a large waterway. No pits or ash accumulations are ever found on these sites, although the area over which objects are scattered is usually considerable. This has suggested a numerous population but a short sojourn, the incidentally scant ash deposits being subsequently dissipated with the loss of their osseous contents. Until the exploration of the great village site at Lamoka lake (Schuyler county), therefore, only objects of stone were known from this period. At this station ideal conditions of isolation and proximity to food resources had led to the settling of a permanent village, in the deep débris of which a wealth of bone and antler material had survived side by side with thousands of stone objects identical in character with the scattered specimens from the camp sites.¹⁰

The most characteristic type implement of the Archaic Algonkin is the faceted or beveled adze (pl. 9*n-p*) which has never come to light on any site of later period in New York state or elsewhere to the writer's knowledge. With it are associated at Lamoka lake, the key station, as well as on the numerous temporary sites, the following articles which may be accepted as the criteria of the Archaic Algonkin Period: the plano-convex adze (pl. 9*q*), rectangular and triangular celts (pl. 9*l, m*), celt-like scraper (pl. 9*j, k*), cylindrical pestle, shallow mortar and muller, pitted and unpitted hammerstones, anvil stone, notched net-sinker, straight stemmed and notched arrow, spear and javelin heads (pl. 9*a-f*), knife blades and perforators (pl. 9*g-i*). The bone and antler industry of Lamoka lake includes various kinds of awls, double-pointed bone implement (pl. 10*o-s*), fishhook (pl. 10*a-i*), gorge (pl. 10*j-n*), knives or scrapers made from the scapula of the deer (pl. 10*dd-ff*), bird calls or whistles (pl. 10*l, y-aa*), beaver teeth worked for knives or scrapers (pl. 11*e*), antler punch (pl. 11*k*), a unique class of antler objects (pl. 11*i, m-p*), turtle carapace cups and several problematical forms (pl. 11*a-c, l*). The dog was used and probably baskets, but pottery, steatite, worked shell, native copper, polished slate, and carbonized agricultural products were totally lacking, as was the grooved ax, gouge, and bone harpoon.

The cemetery at Lamoka lake was not discovered but some human remains, in part mutilated and containing embedded arrowpoints, occurred in refuse pits and were, on justifiable grounds, attributed to the occupants. These are the only skeletons of the Archaic period known and they reveal a

¹⁰ Explored 1925-1927 by Rochester Museum of Arts and Sciences.



Chipped and polished stone implements from the Lamoka site
(Archaic Algonkin). *d* is $5\frac{1}{4}$ inches in length.



Bone implements from the Lamoka site (Archaic Algonkin). *b b* is $7\frac{1}{2}$ inches in length.



Bone and antler artifacts from the Lamoka site (Archaic Algonkin).
p is $9\frac{1}{8}$ inches in length.



^a
Adult male skulls from the Lower and Upper Horizons at the Lamoka site (Archaic and Second Period Algonkin).

long-headed population,¹¹ with high skull, narrow nose, high narrow face and orbits of medium height (dolichocranial, hypsicranial, leptorrhine, leptoprosopic, mesoseme). (Pl. 12a).

From the presence of the beveled adze in lower Ontario,¹² northern Ohio,¹³ in lower New England,¹⁴ in eastern Pennsylvania,¹⁵ and throughout the course of the Susquehanna,¹⁶ the range of the Archaic Algonkin may be inferred. It is very rare in most of these localities, being most abundant in the Susquehanna valley and it usually occurs as strays without definite context. Although the writer can find no reference to the appearance of this type of adze south of Pennsylvania, he considers the probability high that a wave of the Archaic population intruded even farther south, where it encountered influences which were radically to modify it both physically and culturally.

On the surface of the Lamoka lake site and in the superior layers of a few pits, which often exceeded four feet in depth, were encountered artifacts of stone, bone, shell, and pottery, totally distinct from the Archaic congenies. They occurred, too, as the grave goods of the few prepared graves, clearly intruded into the older *débris*, from which brachycranial skeletons were recovered. These comprised the grooved ax, gorget, bannerstone, sinew stone, grooved maul, chopper, marine shell beads of several varieties, hematite and poorly levigated, pointed-bottomed pottery of parabolic shape, with impressed twig, fabric, and punctate ornamentation (pl. 13a-e).

Anthropometric studies of the crania reveal a type in striking contrast with the Archaic inhabitants, who appear to have suffered severely at the hands of the invaders. The head form was broad and high-vaulted, with broad nose, low and relatively broad face and low orbits (brachycranial, hypsicranial, platyrrhine, chamaeprosopic, microseme, pl. 12b).

This is the predominating culture of the coastal shell-heaps about New York City and on Long island. Middens and village sites examined by Harrington,¹⁷ Skinner,¹⁸ Pepper, Parker,¹⁹ and others at Cold Spring on northern Manhattan island, Pelham Bay park, Weir Creek point in

¹¹ Writer's studies embodied in unpublished manuscript.

¹² A. C. Parker, ms. notes.

¹³ Henry C. Shetrone, and E. F. Greenman, personal communication.

¹⁴ Warren K. Moorehead, personal communication.

¹⁵ Max Schrabisch, personal communication.

¹⁶ Based on the collection of Dr. T. B. Stewart, Lock Haven, Pennsylvania.

¹⁷ M. R. Harrington, *Ancient Shell Heaps near New York City*, AMNH-AP 3, 1909.

¹⁸ Alanson Skinner, *Archeology of the New York Coastal Algonkin*, AMNH-AP 3, 1909.

¹⁹ A. C. Parker, *Two Characteristic Coastal Algonkin Sites*, in *The Arch. History of New York*, part 1.

Greater New York, Port Washington, and Oyster bay, Long island and elsewhere have yielded the grooved ax, gorget, bannerstone, grooved hammer or maul, chopper, sinew stone, "bola" stone, net-sinker, cylindrical pestle, pitted stones, celts, celt-like scraper, plano-convex adze, plummet, perforator, notched and barbed projectile points, ocean shell beads, steatite, pointed-bottomed pots without collars, marked with fabric cord, twig, and punctate patterns (like pl. 14), crude pottery pipes, some native copper beads, hematite, bones of the dog, charred corn and beans, the bone gorge but not the fishhook or harpoon, awls, flat needle, antler flaking tool, bead, beaver tooth knife, and antler arrowpoint.

The combination of brachycephaly with such distinctively new elements as clay and steatite pottery, the pipe, grooved ax, polished slates, and marine shell beads has compelled the writer to postulate a southern source for the Second Algonkin culture of New York. These artifacts occur together over much of the South Atlantic as well as the Mississippi-Ohio area. Moreover, a skull form identical with that found in the upper level at Lamoka in general distinguishes the Muskoghean tribes,²⁰ whose known range to South Carolina is believed to have early extended as far north as Virginia.²¹ Other tribes like the Algonquian Shawnee, known to have been great rovers, the ancient stone-grave people of Tennessee and Kentucky²² and their predecessors in Kentucky,²³ shared this same physical type.

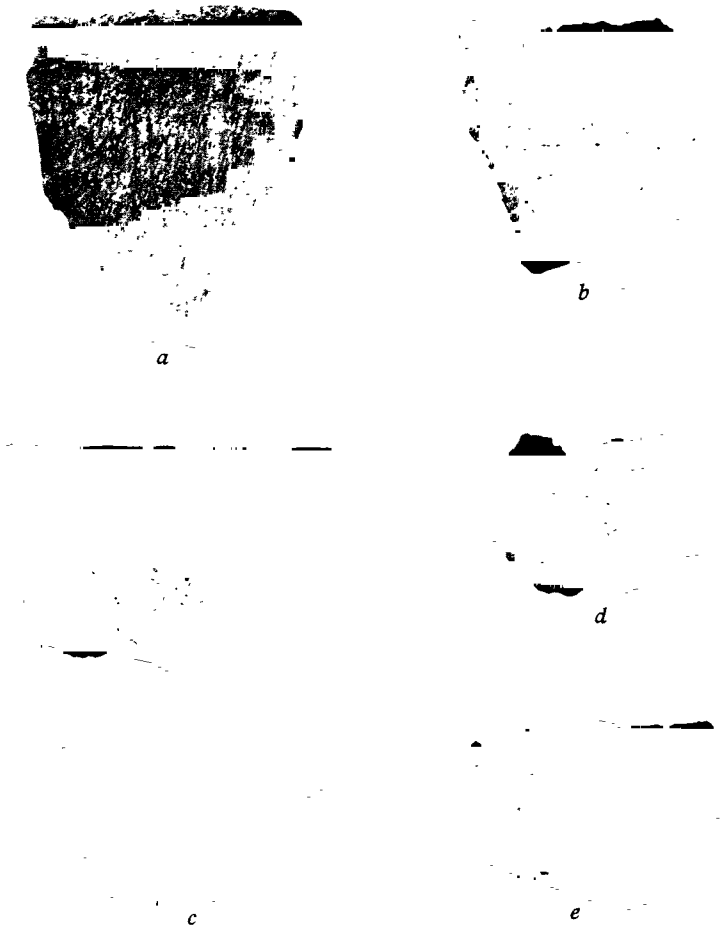
The center of influence and diffusion cannot at present be determined. Some of the exotic stone material recovered at Lamoka has been expertly identified with New Jersey outcrops and the very frequent association of this culture with shell-heaps (even at Lamoka where freshwater mussels occurred with pottery) suggests that these people had for a long time lived in proximity to the sea. Everything considered, the region about Chesapeake bay is a likely source from which Archaic Algonkin groups, acculturized with such new increments as pottery, polished slates, and the grooved ax, and physically modified by a round-headed population, were turned northward again through the pressure of renewed group movements. That these new invaders were Algonquian, despite the radical alterations they introduced, and not actually of Muskoghean or other stock is certain from their having persisted as the Coastal Algonkin of historic times. This is clear from both physical and cultural remains, although it will presently

²⁰ R. B. Dixon, *The Racial History of Man*, 434-435, 1923. Scribner's, New York.

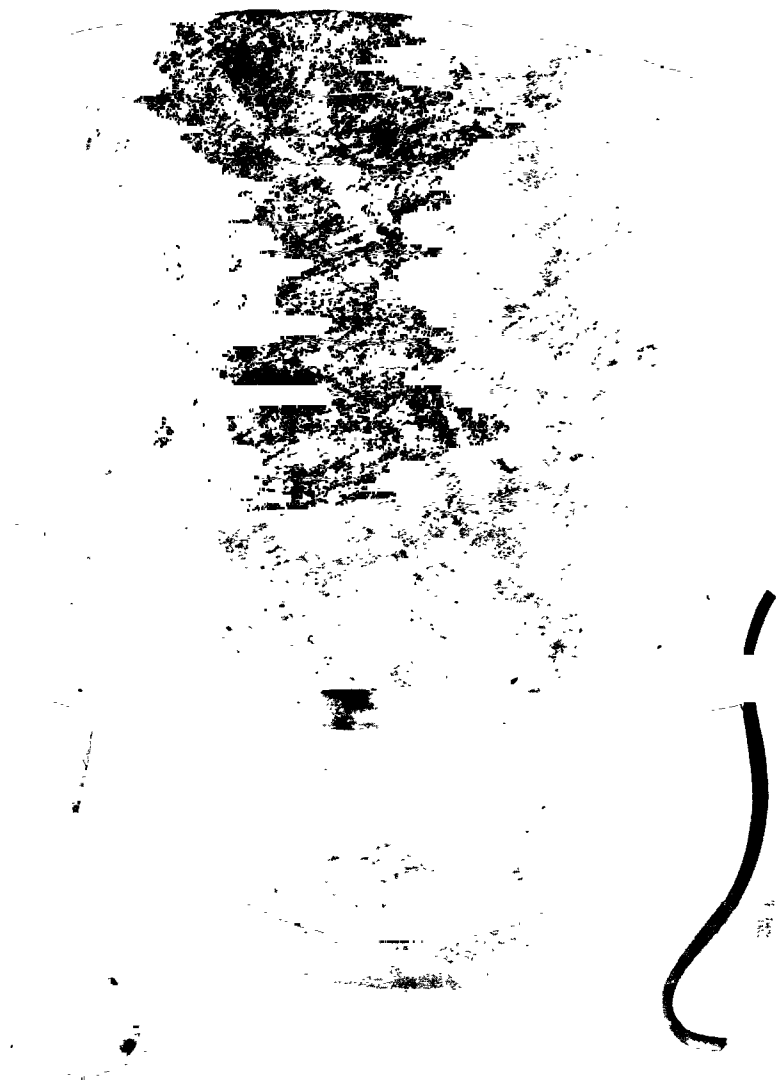
²¹ A. C. Parker, unpublished data.

²² Dixon, *ibid.*

²³ W. D. Funkhouser and W. S. Webb, *The So-Called "Ash Caves"* in Lee County, Kentucky, University of Kentucky, Repts. in Arch. and Anthr. 1, 110, 1929.



Potsherds from the Lamoka site (Second Period Algonkin).



Restored pottery vessel from site near Mt. Morris, Livingston county, New York
(Second Period Algonkin). Height $15\frac{1}{2}$ inches.

be shown that mutations followed as the northward trend of the invaders brought them into contact with Archaic bands still resident in New York.

Shell middens on the Connecticut,²⁴ Maine²⁵ and Nova Scotia²⁶ coasts, apparently related to certain inland sites, probably mark a northward extension of the Second Algonkin occupation of New York, for they contain such characteristic artifacts as stamped pottery,²⁷ the grooved ax,²⁸ plummet,²⁹ broad-bladed projectile points, perforated animal teeth, the bone gorge, and hematite. An innovation appears in the bone harpoon, which is relatively common in the northern middens but totally absent along the New York coast and at Lamoka lake. A broken specimen was, however, recovered on an inland New York site, referable to the Second Period.

The hostile character of the initial contact of the Archaic and Second Period Algonkins, witnessed at Lamoka lake, apparently subsided into a more amicable relationship, for the skeletal remains found on several sites in central New York portray the results of some degree of amalgamation of the dolichocranial and brachycranial populations. These new head forms are predominantly mesocranial, hypsicranial, and platyrrhine. Graves on the Backus site, on the east shore of Cayuga lake (Cayuga county), the key station,³⁰ yielded marine shell beads, a steatite vase-type pipe with an effigy of the human face carved on the bowl, closely similar to a specimen from a shell-heap at Inwood, Manhattan island, and hematite, while stamped Algonkin pottery and bone beads lay in refuse accumulations close by.

Less than a mile distant in Cayuga lake is tiny Frontenac island, where graves and pits were found³¹ containing the plummet, bannerstone, notched arrowpoint, steatite and rude clay pottery with cord, fabric, and punctate ornamentation, and sundry bone implements including a fragmentary harpoon. Unfortunately the human remains were too defective to admit of measurement.

At numerous places along the Seneca river, notably on Howland and Kipps islands and at the south end of Crusoe lake in Wayne county,

²⁴ Warren K. Moorehead, *Archeology of Maine* (Andover), 1922.

²⁵ *Ibid.*

²⁶ Harlan I. Smith, *Some Shell-Heaps in Nova Scotia*, Nat. Museum of Canada (Ottawa), 1929.

²⁷ Occurs from top to bottom. (Moorehead, Smith, personal letters.)

²⁸ Rare in Nova Scotia (Smith, 51).

²⁹ Not recorded from Nova Scotia (Smith, 51).

³⁰ Explored by Rochester Museum of Arts and Sciences, 1928.

³¹ Donald Cadzow, *Prehistoric Algonkin Burial Site in Cayuga County, New York.*, MAIHF-IN 2, no. 1, 1925.

village and burial sites formerly existed from which amateur diggers took, without record, many hundreds of objects comparable with the types described from the Second Period.

A later phase of this period was certainly influenced by small bodies of mound-building people entering the state through the southwestern counties.³² True mounds are known to have existed as far north and east as Irondequoit bay in Monroe county. The monitor or platform pipe of steatite, a variety of stone tube with a small orifice at one extremity and a distinctive type of projectile point having a straight stem and pointed tang link with the Adena culture, but pearl beads and double cymbal ear plugs have stronger Hopewell affinities.³³

From Chautauqua, Cattaraugus, and Allegheny county mounds and contiguous sites, there have been recorded in addition to these enumerated objects, bar and bird amulets, tubes fully open at both ends, bell pestles, copper beads, axes and blades and barbed projectile points fashioned from Ohio flint.

Some mound sites, like that on Squakie hill, Livingston county, seem actually to have been colonized by mound people. Here were found a double cymbal copper earplug, pearl beads, broad notched flints, platform pipes and copper spears and axes.³⁴ The human remains, enclosed in a stoned up vault and said to have been badly decomposed, were not preserved.

Other sites, such as the great village at Vine valley, Yates county,³⁵ appear rather to have been occupied by Algonkins of the Second Period who were heavily affected by mound culture. The physical type is little if at all altered from that of the Backus site, although a stronger brachycranial factor may be noted.

Tubes with one partly blocked extremity, projectile points, and part of a platform pipe occurred on this site together with native copper celts and beads, the polished slate gorget, birdstone and bar amulet, ocean shell beads, hematite and stamped Algonkin pottery identical with Second Period ware from Lamoka and the coastal middens. Additional links with these consist of crude "elbow"-type pipes of clay, the "bola," plano-convex adze, triangular celt, roller pestle, perforator, bone bodkin, bone bead, drilled canine teeth, antler flaking tool, carbonized corn and beans and bones of the dog.

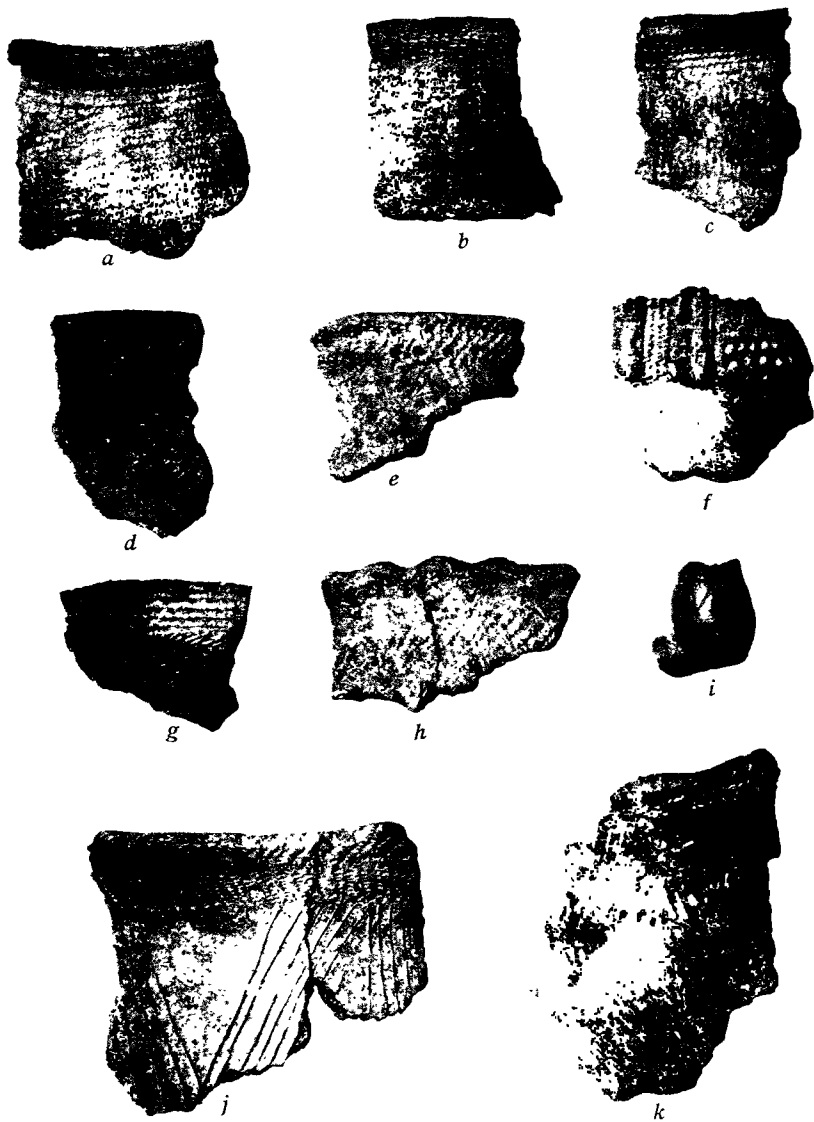
The mound influence may be credited for the presence in New York of

³² A. C. Parker, *History*, 83-98.

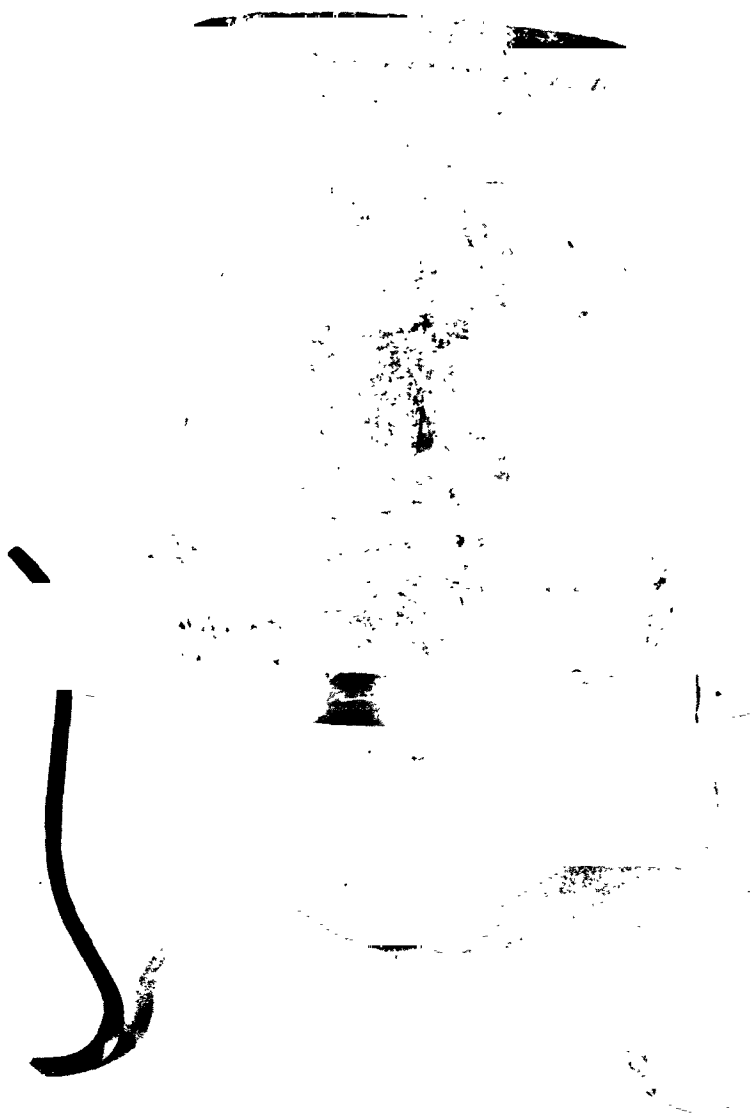
³³ Henry C. Shetrone, *The Mound Builders* (New York), 1930.

³⁴ A. C. Parker, *History*, 92, 598.

³⁵ *Ibid*, 92, 716.



Potsherds and pipe bowl from the Castle Creek site (Third Period Algonkin).



Restored pottery vessel from the Levanna site (Third Period Algonkin). Height 12 inches.

the following: the platform pipe, stone tubes, bar amulet, boatstone, native pearl beads and considerable copper in the form of axes, spears and beads.

The movements and history of the Iroquois have been treated by Parker in a series of publications³⁶ which monopolize the literature on this important subject. Their migration into the state through its southwest corner and probably up the Susquehanna from northern Pennsylvania brought them into contact with the Algonkin of the Second Period, and the writer believes that this influence constituted the impetus behind the cultural alterations which differentiate the Third Algonkin Period.

At the Willow Point and Castle Creek sites,³⁷ in the Susquehanna and Chenango valleys, respectively, near Binghamton, the transition is vividly seen in the ceramics, stone industry, and skeletal remains. The rather large skeletal collection obtained at Willow Point has been resolved into two physical blends, clearly the resultants of the intermixture of three physical types, two of which constitute the well-known early Iroquoian³⁸ (Proto-Negroid, dolichocranial, hypsicranial and platyrrhine with its secondary factor, Proto-Australoid, dolichocranial, chamaecranial and platyrrhine) and a third which we have shown to characterize the original Second Algonkin type as seen at Lamoka lake. Identical pottery from the graves of both types proves their contemporaneity and in itself corroborates the blood mixtures, for the Algonkin punctate style of ornamentation appears on the typically round-bottomed, constricted necked, collared Iroquois jars. This combination is frequently encountered in coastal pottery, where it has resulted in much confusion on the part of excavators, some regarding it as Algonkin, others as Iroquois. The punctate impressions, which appeared together with cord, fabric and twig brush markings on ware of the Second Period (see pl. 13), nearly exclude all others in the decorative motif of the Third Period when they occur as arrangements of rectilinear lines often in parallel groups (see pl. 15*a-c, f-h, j*) and in herring-bone patterns (see pls. 15*d* and 8). Rude attempts to copy unfamiliar Iroquois incised decorations are not uncommon on most of these sites (see pl. 15*e, f, j, k*).

Triangular projectile points, introduced by the Iroquois, who came to use them exclusively, are the principal type of the Third Period.

At Lakeside park on Owasco lake³⁹ (Cayuga county), and at Levanna on

³⁶ Parker, *History; Origin of the Iroquois as Suggested by their Archaeology* (AA 18: 479-507, 1916); *Analytical History of the Senecas* (N. Y. S. Arch. Assoc.) *Researches and Transac.* 6, 1925; et al.

³⁷ Explored 1930 and 1931 by Rochester Museum of Arts and Sciences.

³⁸ Roland B. Dixon, *The Racial History of Man*, 411-414 (New York), 1930. Ales Hrdlicka, *Catalogue of Human Crania*, National Museum, 1927.

³⁹ A. C. Parker, *The Owasco Algonkian Site*, in *The Archaeological History*, part 1.

Cayuga lake⁴⁰ are situated the key sites of this culture. The pottery on these sites still retains the general Algonkin form but a tendency toward constriction of the neck appears on many pots (see pl. 16). Pseudo-cord embellishment, executed with the same toothed stamp used to impress the punctate patterns, is often seen (see same pl.).

Relatively few stemmed points occur, but the list of stone and bone implements closely parallels that compiled for the Second Period and embraces: the celt of several forms, celt-like scraper, "bola" stone, pitted hammer, anvil and firestones, cylindrical pestle, shallow mortar, notched net-sinker, perforator (rare), awls (pl. 17*a*, *l*, *o*), double pointed bone implement (pl. 17*j*, *k*), bodkin (pl. 17*i*, *n*), beaver and bear tooth tools (pl. 17*f*, *g*), antler flaker (pl. 17*d*, *e*), bone bead (pl. 17*b*, *c*), the use of hematite, the dog, and the cultivation of corn, beans, and squash.

The elbow-type pottery pipe, noted in a crude form from the Second Period, reaches its acme of artistic perfection in the Third (pls. 17*p*, *q* and 7*i*).

The bone harpoon, both unilaterally and bilaterally barbed, recorded only once from a Second Period site, becomes an important implement at this time (pl. 17*h*, *m*).

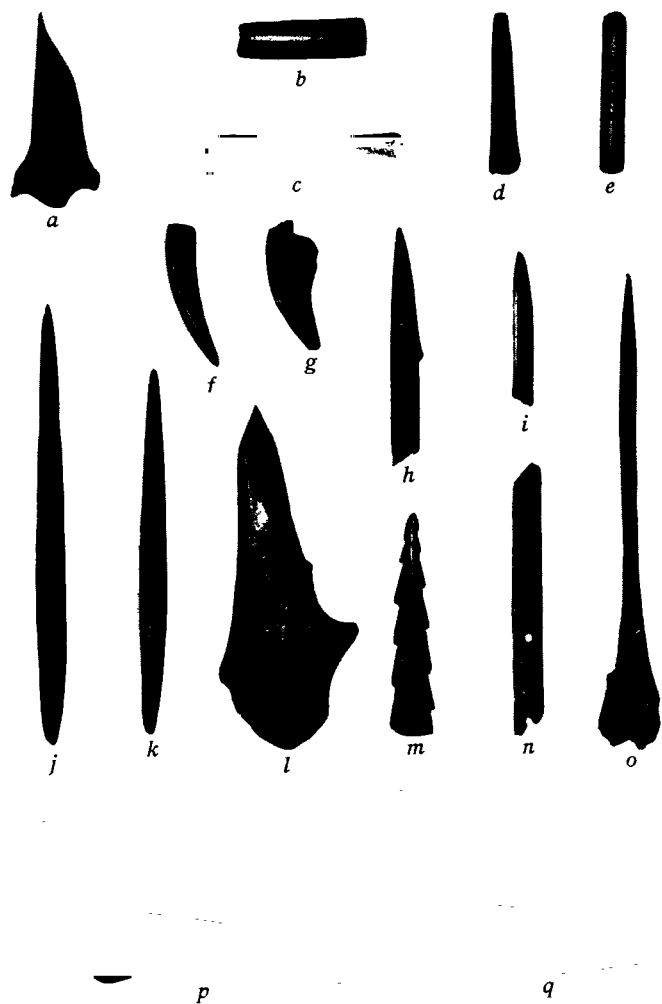
There is, however, a total absence of the grooved ax, gouge, plummet, polished slates, ocean shell beads, and copper. Singularly enough, none of these articles (with the exception of ground olivella shells on colonial sites) have ever been found on a station inhabited solely by the Iroquois, who seem to have manifested a peculiar aversion for some of them.

Such sites as Owasco and Levanna show an attenuated Iroquoian culture stimulus, which must have preceded the northward advance of this people, rather than the result of actual contact through tribal movements, such as appeared on the Willow Point and Cattle Creek sites. But since no skeletal remains in these sites are yet available for study, a possible determination of blood intermixture is precluded.

The virile character of the Iroquois wrought the gradual acculturation of the more retarded Algonkin, who progressively yielded, retiring toward the north and east.

ROCHESTER MUSEUM OF ARTS AND SCIENCES
ROCHESTER, NEW YORK

⁴⁰ W. A. Ritchie, an Algonkian Village Site near Levanna, New York, Rochester Municipal Museum, Research Records, 1, no. 1, 1928.



Bone and antler artifacts and clay pipes from the Owasco and Levanna sites (Third Period Algonkin). *o* is 5½ inches in length.

THE NATIVE MUSIC OF AMERICAN SAMOA

By FRANCES DENSMORE

ONLY one song has been published at Pago Pago, American Samoa. This song is said to have been composed by the dashing Faatui, son of the chief Amituau-Leasuasu, and the song was first sung by a group of young men of Apia, Samoa, at the departure of the popular American Admiral Kimberly, after the naval disaster of 1889. The title is "Tofa mai feleni" ("Goodby my friend"). Many different words are sung to the same tune, both in English and Samoan, and the melody is very popular throughout the South Seas and especially in Samoa.

In the edition of the song published by E. W. Tuedner of Pago Pago the words express the regret of one who is leaving the island, the second verse being typical of the poem:

Good-bye, Feleni, my barque sails away,
Away from fair Islands where all is bright and gay,
But I'll not forget you, nor this beloved land,
When far, far away upon my native land.

Chorus:

Oh, I never will forget you,
And sadly repeat my fond adieu,
Oh, I never will forget you,
To Samoa I bid adieu.

The melody is simple and pleasing, and many have heard it as a last farewell when leaving the tropical island. Ships of foreign nations sometimes call at Pago Pago and their bands play the "Tofa song," making it seem a different piece than when it is sung or played by the Samoans. Yet the Tofa song, with its gay front cover, is the place where East meets West in a kind of world fellowship through music.

The visiting ship sails away, the navy officials resume their routine duties, the native chiefs go back to their villages, and the Samoans return to their old songs.

An inquiry concerning the native music of American Samoa was made possible by a peculiar circumstance. Lieutenant M. E. Zimmerman, United States navy, and husband of the writer's cousin, was assigned to duty at Pago Pago and consented to obtain answers to a set of questions on primitive musical customs. The answers were secured from the court interpreter and corroborated by other Samoans, every effort being made to have the questions clearly understood and the answers correctly interpreted. While

this is a circuitous manner of studying Samoan music, the result is interesting as it shows resemblances between Samoan and other primitive music.

Two sorts of songs are in use in American Samoa: (1) a crystallized melody which is repeated without change and handed down from one generation to another; (2) a long narrative or speech, sung to an improvised melody. Chief in the first class are war songs; it is also said that new songs of this sort are composed from time to time. Songs of the second class usually relate to the work in progress, to children at play, or to any other interest of the hour. It was said that "work in the field, rowing, fishing, or riding in a bus is often accompanied by song."

In reply to a question about musical instruments it was said.:

The only native instrument now in use is a horn made of a sea shell and used by fishermen when a shark is caught. In the olden days reed instruments and drums were used. Some of the older men state that they recall these instruments but none exist on the island at the present time. It is believed that early missionaries obtained these instruments for a European museum.

The Samoans never sing solos, all their singing being in chorus.

It is interesting to note that the two types of songs used by the Samoans were found among the Filipino at the Louisiana Purchase Exposition at Saint Louis, Missouri, in 1904. This Filipino music was studied by the writer for about three weeks. A large amount of material was available, as the Filipino were singing almost constantly for the benefit of the public. Four tribes were under observation,—the Negrito, Igorot, Samal Moro, and Lanao Moro—and the songs of each were heard. In addition to songs that were clearly improvised (with and without accompaniment) there was heard a repeated melody with instrumental accompaniment, this being the Amba of the Negrito. A young Negrito who spoke broken English said they have "three songs," the Amba (an expression of happiness), the Uso (a love song), and the Undas (a funeral song). It was also said: "We make up songs about everything. We sing about the people who look at us. We sing 'how funny that fat man looks.' We make up these songs."¹

A long narrative with improvised melody was the only form of song obtained from the Tule Indians of San Blas, Panama. The presence in Washington of a group of these people, commonly known as the "white Indians," made possible a study which would have been exceedingly difficult in their native land. Nine songs were recorded and transcribed either wholly or in part. One transcription was of a performance seven minutes in length. The nine recorded songs were said to be improvisations in both melody and

¹ Frances Densmore, *The Music of the Filipinos*, AA 8: 611, 642, 1906.

words, yet the singer followed a general pattern in each. There were no repetitions of rhythmic periods or long phrases in any song, but one contained a phrase of a single measure which occurred several times.²

The Ute Indians have two forms of song, a crystallized melody and a melodic narrative designated by the writer as "rudimentary song." The latter were long performances without a definite ending. The tones were chiefly those of the major triad and it appeared that the singer combined these according to her fancy. Yet there was a difference in the "songs" which corresponded with their subject. The story of a race between the tadpoles and the mice, and the melody said to have been sung by the prairie dogs, were rapid in tempo, with active melodic progression, while the story of the bear who stole the wolf's wife was sung to a heavier type of melody in a slower tempo. This class of song has been recorded only among the Ute and was sung by an old woman.³ It has been mentioned in one or two other tribes but no one has been found who could sing the songs.

In the improvised songs of the Samoans, the songs of the Tule Indians of Panama, and the "rudimentary" Ute songs we have a distinct art form, the singer having a freedom and skill in his use of musical material that is not required in the repetitions of a set melody. It is to be regretted that more of these improvised songs have not been recorded, as the last person possessing the ability to sing them will soon have entered into the silence of the past.

RED WING, MINNESOTA

² Frances Densmore, *Music of the Tule Indians of Panama*, SI-MC 77, no. 11, 1926.

³ Frances Densmore, *Northern Ute Music*, BAE-B 75: 200-205, 1922.

THE AGE OF LEAD GLAZE DECORATED POTTERY IN THE SOUTHWEST¹

By EMIL W. HAURY

A RECENT study of pre-Columbian Pueblo pottery, particularly that from the upper Little Colorado River drainage, which has been decorated with glaze paints, has brought out additional facts concerning two contested points important to the study of Pueblo ceramics. The first relates to the time status of the lead glaze technique; the second to the value of glazed sherds as time criteria in the stratigraphic series which reflects Southwestern ceramic evolution.

The occurrences of Pueblo pottery decorated with lead glaze pigments are confined to two general areas, viz., the upper Little Colorado drainage, notably the Zuñi valley-Silver creek district, and the Santa Fé region, which includes the

Rio Grande valley from San Juan to Santo Domingo, with the Pajarito plateau on the west and the Galisteo basin and the upper Pecos valley on the east.²

Because of the presence of Hodge's Type B glazed ware in Glaze I strata at Pecos, Kidder³ is inclined to believe that the art of glaze painting developed slightly earlier in the Little Colorado focus than in the Rio Grande. The actual time status of glaze decoration, however, whether invented before the arrival of the Spaniards or whether acquired from them after their advent, has been a moot question.

Claims⁴ for a pre-Spanish origin have been based upon sound stratigraphic evidence, i.e., upon the presence of glaze decorated pottery in layers of debris which accumulated about inhabited pueblos before Spanish contacts. The abundance of glazed potsherds in numerous pueblos which were wholly abandoned before the Conquest has been considered as indisputable proof of an indigenous origin for the art.

The data here given are directly contributory to the above claim and it is hoped that they will serve to amplify the existing knowledge of the subject. The present information is founded not only upon stratigraphy, but also upon the newest instrumentality for determining the age and the chronological sequence of Southwestern ruins, namely, dendro-chronology.

This method, devised and brought successfully into action by Dr. A. E. Douglass,⁵ in dating the time of occupancy of pueblos long since abandoned,

¹ Published with the permission of the National Geographic Society.

² Kidder, 84.

³ *Ibid.*, 95.

⁴ Hodge; Kidder.

⁵ Douglass, 736-770.

is a contribution of inestimable importance to the field of Southwestern archaeology. It reliably and precisely expresses the age of the ruins and the associated artifacts in a manner hitherto impossible. The unbroken tree-ring calendar extending back to A.D. 700, recently established by Dr. Douglass, has made possible the dating of more than two score ancient pueblos including such notable sites as: Pueblo Bonito, Aztec, Cliff Palace, Beta-takin, Keet Seel, and Kokopnyama.

In the list of dated ruins are also two lesser known sites, the first located at Showlow, Arizona,⁶ and the second at Pinedale,⁷ 16 miles west of the former. Both ruins lie north of the Mogollon rim in the forested country drained by Silver creek and its affluents; both were wholly abandoned before the arrival of the Conquistadores. Excavations in these two pueblos were conducted during the summer of 1929 by the Third National Geographic Society Beam Expedition which was concerned primarily with the recovery of charcoal and wood to be utilized in tree-ring research. The correlation of the facts derived from charcoal and from the general diggings brought out points which have a decided bearing on the time element of glaze painting.

In the Showlow ruin, two distinct levels of occupancy were found to exist. That considerable time elapsed between the two was strongly suggested by difference in ceramic types. On the basis of associated datable charcoal, the tentative dating of A.D. 1204 has been assigned to the first and A.D. 1375 to the second horizons. Such dates are founded upon the year of cutting of timbers recovered from the respective levels. Cutting dates usually denote construction dates and therefore do not recognize the spatial extension of the respective horizons. It is difficult, indeed, to determine the duration of a period of occupancy when there are no breaks in the continuity of development, except where a given level is succeeded by a dated one. In the case of the two Showlow levels, it is apparent that an interval of approximately 170 years elapsed between what can be considered as two general building periods. Occupation, however, was not continuous in that part of the pueblo explored, as shown by the dissimilarity of the pottery and the absence of transitional types from the two horizons.

Excavations in Pinedale ruin indicated the fact that the major period of occupancy bore an intermediate relation to the two Showlow levels, i.e., the Pinedale horizon post-dated the earliest and preceded the last Showlow levels. In this capacity, the Pinedale occupation proved to be an indispensable connecting link, showing that there was no discontinuity in the

⁶ Bandelier, 392-393, Hough, I, 301.

⁷ Fewkes, 164-167.

ceramic development during the interim of the two Showlow levels. Again, on the basis of related dated charcoal, the Pinedale level is given a general dating of A.D. 1290. Thus, three culture strata, dating 1204 (?), 1290, and 1375 are represented in the two ruins, their sequential occurrence being founded upon stratigraphy and dendro-chronology. (See fig. 1.)

SHOWLOW RUIN	PINEDALE RUIN
<p><i>Third Horizon</i> A.D. 1375 ±</p> <p>Lead glaze (black only) continues on red ware.</p> <p>Black-on-white ware and associated glaze non-existent.</p>	
	<p><i>Second Horizon</i> A.D. 1290 ±</p> <p>Lead glaze of black color appears on red ware.</p> <p>Black-on-white pottery abundant, some bearing glaze decoration not of lead composition.</p>
<p><i>First Horizon</i> A.D. 1204 ± (?)</p> <p>Lead glaze technique unknown.</p>	

FIG. 1 Diagrammatic correlation of Showlow and Pinedale culture strata showing relation to the development of the lead glaze technique.

Glaze decorated sherds were not encountered in the lower Showlow level. They make their first appearance in the Pinedale horizon and continue in abundance in the upper Showlow level. In so far as our collections show, lead glaze paint occurs invariably on red ware in association with a flat, chalky white pigment. There was also present in Pinedale ruin a considerable amount of black-on-white ware, some of which was decorated with a paint of distinct glaze character. Since determinations do not indicate the presence of lead as a base for the glaze, thus suggesting an altogether different type of pigment, it is discussed briefly in the later paragraphs.

The lack of glazed pottery in the lower Showlow floor of occupation is a fortunate circumstance as its time of appearance in this region is consequently limited to the period represented by the Pinedale stratum. That the beginnings of the Pinedale-Zuñi glaze development, the latter presum-

ably the oldest in the Southwest, were practically coincident is clearly shown by the fact that pottery types from the lower Showlow level are analogous to those of Hodge's pre-Hawikuh Period A.⁸ Both periods antedated glaze painting but were followed immediately by it. Hodge's finds as to the relative time of appearance of the glaze technique in the scale of development at Hawikuh are thus substantiated. But almost from the beginning of glaze development in Hawikuh and Pinedale, the products were not identical; the pottery from each site assumed local variations. Glaze painting was comparatively short-lived in the Silver Creek area since this region was mostly abandoned by Pueblo people by the beginning of the fifteenth century. In the Zuñi district, occupation has been continuous from a remote period to the present time and glaze painted wares were extended into the Historic Era.

During the course of excavations at Pinedale, two rooms and one kiva were encountered which had been destroyed by fire. Numerous fragments of datable charcoal and many glazed sherds were recovered from each chamber. On charcoal fragments from the two rooms, the final rings which represent the years of cutting⁹ of the trees, read from 1281 to 1290. As cutting dates usually denote actual construction periods, we may say that the two rooms in question were built by about 1290; the kiva was apparently built a few years later. The pottery found in dated rooms may be older than the rooms or it may have been manufactured long after the habitations were built if the latter were occupied over a long period of time. Consequently, much precaution must be exercised in a final interpretation from such evidence since the circumstances of association are of the utmost importance. In the present case, because of the fact that the Pinedale level was preceded and succeeded by known culture strata, little doubt remains as to the age of the Pinedale glaze painted ware. Evidence to the effect that the three burned rooms were not occupied for an excessive length of time was found in the total absence of pottery types belonging strictly to the upper Showlow level.

The Pinedale glaze is almost exclusively of black color. Green glaze seems never to have been made locally, although a few sherds bearing such paint were found. Because of their general dissimilarity to Pinedale pottery, they were considered intrusive, undoubtedly coming from Hawikuh where green glaze was prevalent. A flat white paint is usually associated

⁸ Hodge, 29.

⁹ There are several reasons for believing that the ancient pueblo builders preferred green to dead wood when a timber supply had to be cut. Hence, on a tree felled while growing, the first ring beneath the bark signifies the year of cutting

with the black glaze on bowl exteriors, seldom on interiors. The glaze producing paint was not so easily applied as the flat colors to which the potters were accustomed. This resulted naturally in inferior designs, although in Pinedale pueblo the decoration never degenerated to the point exemplified in later Zuñi and Rio Grande vessels. The paint varies in degree of opacity, sometimes appearing quite translucent. It usually assumed slight relief and tended to run on firing. Frequently minute gritty particles may be detected in the paint, which impart a rough surface.

Not all of the red pottery at Pinedale is decorated with glaze paint. On some vessels the pigment is dull and flat, on others it shows incipient glaze qualities, and on still others it appears as good glaze. All vessels are technologically the same and unquestionably of local manufacture. This fact may be considered as further argument that glaze paint was either introduced or developed locally during the time represented by the Pinedale horizon.

To ascertain the basic constituents of the Pinedale glaze, sample sherds were submitted to Mr. F. G. Hawley¹⁰ for qualitative analysis. The results of individual determinations of the glaze appearing on eight vessels showed lead to be present in greater or lesser quantities in each case. Copper was also invariably present, and usually traces of manganese. A composite test of the paint on 12 sherds indicated the average ratio of lead to copper to be about 1:2, although in single tests the ratio obviously varies. The actual functions of the main ingredients are understood well enough. Lead is present in the form of a silicate which produces the glaze; copper, manganese, and impurities impart the black color. To attempt an explanation, however, of the methods of compounding these elements and their form when used, would be wholly conjectural and consequently of little value.

Fifteen separate tests in Pinedale ruin revealed that glazed red ware and black-on-white pottery were coexistent, the latter being apparently of Upper Gila affinity. The two ceramic types were present in about equal proportions. These finds do not agree with Hough's observations¹¹ that glaze decorated wares "are frequently associated with colored wares but never with black-on-white." The above association of the two types may either signify that black-on-white survived later or the glaze technique was developed earlier than has hitherto been supposed.

The black glaze already alluded to as occurring on some of the black-on-white pottery from the Pinedale stratum appears superficially to be

¹⁰ Chief Chemist, International Smelter, Miami, Arizona.

¹¹ Hough, II, 247.

much like the glaze paint on red ware. In the best examples it is extremely glossy but shows very little relief. It may be translucent or coal black and opaque and is quite free of gritty particles. Prior to an analysis, it was thought to be basically the same as the glaze on red ware, but tests indicated an altogether different condition. The anticipated lead and copper ingredients were totally lacking, instead, the principal elements were iron, manganese, and apparently carbon, none of which could impart the glaze character. This latter trait is undoubtedly due to the presence of a readily fusible silicate, such as sodium.

The present interest lies not so much in a determination of the exact properties of the pigments, or in the possible ways in which they were prepared, but in the fact that two dissimilar types of glaze paint occurred contemporaneously for a brief period at about the close of the thirteenth and beginning of the fourteenth centuries. The glaze on the black-on-white is undoubtedly the older of the two, as an antecedent phase was recognized on the black-on-white of the lower Showlow level in the form of a thin shiny paint. Its development culminated in the Pinedale stratum, as black-on-white and its related glaze did not survive into the upper Showlow level whereas lead glaze did. The question arises whether or not the glaze evidenced on the black-on-white served as a stimulus for the lead glaze development.

The time status of the glaze technique is also clearly manifested in Showlow ruin. It appears on red ware which is different than, but directly derived from, the red ware phase represented in Pinedale ruin. In 13 rooms of the upper level of occupation, all of which were apparently constructed by 1375, glaze decorated pottery was consistently present. Two other habitations of the same culture level, but dating 1383, also contained glaze-decorated pottery. It is to be remembered that this ware was not of an exotic order but the dominant type, composing 75 percent of the entire amount of sherd material recovered. Considered collectively, glaze-painted pottery was associated in 15 dwellings with charcoal and wood, none of which registered a cutting date later than 1383. Evidence points to the fact that the pueblo was totally abandoned soon after 1383, undoubtedly a full century before Coronado's arrival at Hawikuh, less than a hundred miles distant to the northeast. Consequently, claims for a post-Spanish origin for lead glaze are out of accord with the present findings.

In so far as our sherd collection shows, the Showlow glaze is always an opaque black, applied on red slipped ware and outlined with white. Where thin, the glaze usually has a metallic luster; where thick, it tended to become dull and vitreous. Apparently the amount of paint present, the length

of the firing process, and the intensity of the fire, were modifying factors in the final appearance of the pigment. The paint is generally more gritty than the glaze from the Pinedale level.

Qualitative determinations again showed lead and copper to be the main ingredients, practically the same ratio of lead to copper obtaining as was noted in the Pinedale glaze. There seems to have been no great departure in the method of compounding the pigment, if such was the case, over a period of approximately 100 years.

The use of glaze in any form and especially as an entire surface coating is generally associated with people who used the potter's wheel. The ancient Pueblo potter never attempted the use of glaze in the capacity of a surface covering, applying it solely as embellishment; nor did she use a wheel. These two factors are of singular importance as they further attest a native origin for the art. The very use of glaze paint in the Southwest at an early time provides an uncommon example of the invention, the development, and the degeneration of the lead glaze technique by a non-wheel using people.

In summarizing, it is allowable to assert a pre-Hispanic status for lead glaze painting on two grounds: (1) its occurrence in two culture horizons in Showlow and Pinedale ruins stratigraphically anterior to the beginning of the Historic Era in the Southwest; (2) its association in both levels of occupation with datable charcoal of which none has registered a cutting date later than 1383. The abundance of pottery bearing lead glaze decoration in the 1290 level at Pinedale is a decisive indication that glaze painting was known fully two centuries before 1540. Consequently the lead glaze technique must be placed in the category of indigenous rather than accultural traits of the Pueblo Indian.

Bearing this in mind, together with the fact that glaze decorated wares were not widely distributed, the value of glazed potsherds becomes evident. Their importance is twofold: (1) Since the art of glaze decorating was of short duration, beginning, in the light of present information, about 1250 and yielding again to the dull paints soon after the arrival of the Spaniards, as has been shown by other investigators, the presence of glazed sherds in ruins is an unmistakable indicator of a very definite time in the history of Pueblo pottery development. (2) Such sherds found in ruins outside of their related culture area show contacts with the regions in which glazes were characteristic. As a concrete example of these two points: The presence of glazed sherds of a type dominant in the Silver creek drainage about 1375 in the upper layers of a trash mound at Casa Grande, as reported by Glad-

win,¹² is indicative not only of trade relations with a sub-culture ceramically distinct from Casa Grande, but also that Casa Grande, at least in part, was occupied without question as late as the last decades of the fourteenth century.

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¹² The Medallion, pl. 5.

THE FIRST SALMON CEREMONY OF THE KARUK INDIANS

By HELEN H. ROBERTS

SOME years ago a paper appeared in this journal¹ on the general practice of holding a first salmon ceremony by the aborigines of the Pacific coast regions from north central California to Alaska. Because little information has been given on the ceremony as performed by the Karuk living along the Klamath river in northern California, the data on it, secured during a field trip there in the spring of 1926, may be of interest, even though publication has been delayed several years after it was written.² Unfortunately the ceremony in its completeness has almost ceased to be, so that in that year no chance occurred to observe it in operation, but two quite old informants were willing to talk about it. Both were women and both declined to impart the knowledge to any male investigator. It is true that they had never served as medicine men, nor had they ever actually been present at the "making of the smoke," but both were born and raised in the immediate neighborhood of the sacred place on the river bank where the ceremony was performed, now known as Ike's place, and both were wives of medicine men. No. 1 had had considerable fortunate and pleasant contact with whites. She proved a friendly and valuable informant and gave the first information about the ceremony, but the Karuk mercenary instinct was strong in her and for various reasons it was felt desirable to have confirmation of her tale.

No. 2 agreed to tell what she knew of the ceremony on learning that I already had secured considerable information regarding it. She came with the full consent of her husband, but with the understanding that I would not divulge the facts to their tribesmen. They seemed to be a devoted old couple, he being a man of no little good sense. As we were sitting talking quietly together, she remarked that when her husband was medicine man for the salmon ceremony she had known just what he was doing. He had told her all about it, quite, it would seem, as men have been wont to do, at least from the time of Samson to the present day.

Apparently, however, it is impossible for such informants to tell a story logically. They jump *in medias res*, then back to the beginning; they may digress and so get ahead of the story and be obliged to retrace their steps. The two accounts I have of the ceremony substantially agree, although that

¹ Erna Gunther, Analysis of the First Salmon Ceremony, AA 28 605-617, 1926.

² The field trip was made at the expense of certain public-spirited citizens, to whom acknowledgements are due. They are Mrs. Maurice Wertheim, Cos Cob, Conn.; Mr. William Templeton Johnson, San Diego, Calif.; Miss Pearl Chase, Mr. Henry Eichheim, Mr. Harold S. Gladwin, Mrs. Frederick S. Gould, Mrs. Bernhard Hoffman, Mrs. Katherine Hooker, Mrs. F. W. Nordhoff, Mrs. Mary Upson, all of Santa Barbara.

of No. 1 leans toward magical rather than commonsense explanations, while that of No. 2 is the reverse. There is much which No. 1 evidently did not know. Both accounts are sadly jumbled chronologically, but it is quite easy by carefully editing them to put them in order without fear of error. Since they do pretty well agree, I have combined them so as to give a clear idea of the whole procedure, merely noting differences in incidents, but at the last I have had to leave the reports distinct. There are some evident gaps in the account, perhaps more than appear on the surface, but from what is given it is possible to gain an idea of the main features of the ceremony.

Any one of the propitiatory ceremonies for increasing the food supply, for driving out disease, or for procuring a mild winter is known as a *p̄kyáv̄c* among the Karuk. Several of these *p̄kyáv̄c* are held during the year, or were formerly, that for the salmon being quite different from that for the deer, not similar to it, as the author of the paper above referred to remarked, on the basis of information given by Powers.³

The avowed purpose of these *p̄kyáv̄c* was to remake the world, that is, to replenish it. The salmon ceremony was for the purpose of making lots of salmon, as No. 1 put it. The formal name of it in Karuk is *Šar'vk-tōā'mwat*^a which means "to eat down by the river," but it is also known by the general name of *Amai'kiār'am p̄kyáv̄c*, *Amai'kiār'am* being the name of the locality on the Klamath at Ike's Falls where the ceremony was held. This term is applicable not only to the ceremony proper but to the dances and good times which followed it. No. 1 pronounced the word *Amvai-kiār'am*, interpolating a very slight *v* sound, and with her, as with others, the diphthong *ai* tended at times more nearly to *ei*. Strictly speaking, *Amai'kiār'am* is across the river from Ike's, and the name designates not only the immediate bank of the river but the hillside for a considerable distance above. Less exactly, however, it has also come to mean the bank where Ike has his home and the spot down by the water where the smoke-making actually occurred.

So far as I learned, the selection of a medicine man was not a specially formal matter. His duties were somewhat arduous, his period of semi-fasting long, and probably for these reasons it was the custom to pass the honor and onus of office to different men from year to year. The willingness to serve and the decision of the men of the tribe as a group as to his suitability were the factors determining his selection. This somewhat informal method of choice appears to have grown considerably in recent years with the waning strength of a faith which once made the assuming of physical hardship im-

³ Stephen Powers, *The Tribes of California*, CNAE 3: 56, 67, 1877.

perative. Nowadays but few old men care to endure such rigors and the difficulty of finding volunteers has probably had no little to do with the abandonment of the ceremony. In fact, No. 2 remarked that in the old days no one was paid to do it, although that is now a common practice.

The man who assumed the office was called for the time being the *Ex'Ené'evā'shan*. No. 1 did not know the meaning of the name. Apparently it has some connection with one of his duties, the cutting of wood, which will presently be described. The *Ex'Ené'evā'shan* (who hereafter will be designated as the E. for convenience) had a self-appointed helper known as the *Šar'uk'i'ruicī'han* or, as No. 2 had it, *Šar'uk'i'ruicirī'han* (hereafter to be known as the S.). The translation of this name appears to be "down by the river (he rolls it?)," *šárək* meaning "down by the stream," but the rest of the word untranslatable except as a whole. Ordinarily *viət* means "to roll." No. 1 said in response to a question that if the S. were not acceptable to the people they quite frankly made it known and selected someone else. There was never any quarreling about it but she thought a rejected man would go away and keep his resentment to himself.

On the side of the river opposite Ike's place, at the true *Amaikiā'ram*, were two special sweat-houses in addition to that occupied by the men of the tribe in general. One of these was for the E. to dwell in during the month, or less, immediately preceding the actual ceremony of the making of the smoke, which was called *Šar'uk'ām'kuf* or *Šar'uk'āmkoŋ* (*Šar'uk*, down river, *ām'kuf*, smoke). The name of the E.'s sweat-house was *ıkxarē'yaik-mahátciram*, *ıkxarē'yav*⁴ being a term somewhat comparable to *waka'nda* or *ma'na*, supernatural power. *Mahátc* seems to convey the idea of small, while *ram* is a suffix attached to many words and denotes a place, or perhaps better, a station, so that the entire word appears to mean "the small lodging place of supernatural power."

When the E. entered the sweat-house about the first of March⁴ there were no salmon running in the river, but from the time that he entered more or less close watch would be kept by the men of the tribe for the return of the fish, although no watchmen were specially stationed. For the most part, the E. remained in the sweat-house where the men of the tribe might visit him and talk with him but not the women. The men used to sing songs to keep him awake, so No. 1 said, but she did not know them. She remarked that the men nowadays had given them up because they were so hard but that in the old times there was a regular school where they were learned.

⁴ There seems to have been no fixed time. According to No. 2 he might go in only a week or ten days before the time for the ceremony, but evidently the interval of incarceration was longer formerly.

Each day the E. went out on the mountainside and cut a pole with a stone knife. According to No. 1 this part of the ceremony was called *Ex'Ené'evā'sθan*. He brought it down and set it up outside of the sweat-house. She declared that thousands (!) of poles lay rotting outside, for the E. never took them away, and she did not know why he cut them except that in the old days when all the animals were people they did that and so he followed precedent. Many of the reasons for certain procedures of the Karuk, especially in regard to ceremonies for increasing the supply of food animals, are referred to this mythical time. No. 2 said that the poles must be of madrone wood and that they were more properly sticks and were laid against a pepperwood tree outside of the sweat-house. For the ensuing year none might touch them but when the next E. took office he used this wood for the fire in his sweat-house and cut more for his successor. It was not true that thousands of poles lay there rotting. None but those left by the last E. remained by the tree and at most there could not be more than thirty or forty pieces.

After cutting the wood, which became somewhat of a task as the E. weakened with hunger, he had to bathe daily in the river and at this time prayed that there would be plenty of salmon. He employed old words, not the current language. For instance, the word for salmon, *inayār'e*, would be substituted for 'ā'ma', which is the common term today. He prayed after this fashion:

Yan'tcɨp	t'ai'	vur'ahēc	inayā're.
Next time	large	be	salmon.

The first of the salmon that appeared in the run were designated *ucia't!* meaning "early in the spring salmon"

Once a day, about noon, he partook of food prepared for him by his wife or other female relatives, or failing them, friends. It consisted of acorn mush, nowadays eaten with a wooden spoon but formerly with one made of elk horn, and salmon preserved from the previous season. For his meal he repaired to his own home or the one where the food was prepared, the S. shouting to all within earshot to keep silence while he ate. It was the duty of the S. also, apparently, to keep the E.'s special sweat-house clean and neat and to tend the fire.

The E. remained in the sweat-house waiting for the rush of salmon. When they were finally seen the men of the tribe began to fish for them. No. 1 said that not very many attempted to fish or to touch them because they were afraid, preferring to wait until after the fire and the ceremony which made them free to all the people. It seemed that no matter how many

were running in the river or how hungry the people were, a very strong fear of eating the salmon existed until removed by this ceremony. As No. 1 expressed it, the good old people who belonged only to the neighborhood appointed themselves to fish for the first salmon (that is, those who were conscious of tribal dignity and leadership). Before the ceremony the salmon were called *acia't!* but ten days later they became *'ā'ma'* and safe for all to eat.

Ten days before the first of the moon when the ceremony was to occur, a woman of the tribe, agreed upon as proper for the part she was to take, entered the second of the two sweat-houses already mentioned, kept for her, where she must remain in comparative seclusion until the day before the ceremony. She and her lodge were both known as the *ahv'p'ikiāwan*. Only the S. was allowed to enter it and converse with her. At once she assumed the duty of cooking for the E. and the S. who had hitherto been cared for by their female relatives. A long time ago, according to No. 2, all women were ready and volunteered their services and any might be selected. The people did not have to hunt as now to find one willing to do this.

In the meantime the fishermen had been catching salmon. When the first was caught, No. 1 said that none would touch it until after bathing. If many were fishing all bathed in the river. No. 2 did not mention this feature, but said not many fish would be running at that time and that the men fished for several days beforehand so as to be sure to have at least one ready. Any that were caught before the day of the ceremony were killed and kept on the sand in the shade, close to the water, not brought up to the village. In answer to inquiry she said the fish did not spoil although they were not cleaned. She had never seen them there but had often heard that they were so kept. Anyone might fish right up to the day of the ceremony, there being no special number of men. The freshest fish was reserved for the rite when the men were ready to quit, and the fishing was done on Ike's side of the river where the ceremony was to occur. The man who caught the last salmon took it to the spot where the fire was to be made and left it there. According to No. 1, the day just before the first of the moon was when the men made an effort to catch the biggest fish. She stated that the largest salmon was used for the ceremony and was brought up to the house where the E. usually ate and that the S. carried it across the river when they went to perform the ceremony. There may have been a difference in practice from year to year or the people may have fished on both sides of the river. If the men on Ike's side failed to catch any, possibly one might have been carried over from the other side.

On the day before the new moon, the woman or *ahv'p'ikiā'wan* (the A.

as she will hereafter be designated) had to procure the wood for the ceremonial fire. (The entire account of the woman and her activities was given by No. 2. No. 1 omitted all mention of her.)

The wood must be madrone (*kuṣṛṭ'p'* an *aḡará*, madrone dry). Some of the men of the tribe not staying in either of the sweat-houses were ready to take her in a canoe across the river to Ike's side. She departed in silence and did not speak until her return. She was the only woman allowed around the spot where the ceremony was to be held. After she landed, the boatmen did not wait for her reappearance with the wood but recrossed to the *Amaíkiā'* ram side. The woman carried with her in a pack basket slung on her back two wedges made of elkhorn about seven or eight inches long, called *parā'mwar'*, and for a maul the *tak'unu'ris*, a pestle-shaped rock with a stricture in the center forming the grip. Although two wedges were carried, only one was used unless the wood selected proved too tough to split, when the second was employed to assist the process. The woman climbed up the mountainside looking for a dry madrone tree and when she had one to her liking removed the bark so that the big cracks in the body of the tree were disclosed. The tree selected was just large enough for her to reach around with the two hands. After removing the pack basket from her back, she took out a wedge and the maul. From the time she placed the wedge in a crack she was not supposed to breathe, until by hitting it with the maul she succeeded in splitting off two pieces of wood. So she first selected any easy place and had all in readiness before taking a deep breath. If she should breathe before splitting off the two pieces there would be no salmon, but having secured them, she might take her time and accomplish the rest easily, breathing when she liked. She continued chipping until she felled the tree. Then, beginning at the end, she split off chunks from side to side until it was all worked down into small pieces. Every bit must be utilized, even to the finest ends of the limbs with which the E. was to start the fire. After it was all split up and packed in her basket she loaded it on her back and descended to the sacred spot where the fire was to be built. There she left it. The canoe men who had been watching for her return crossed to fetch her. She reentered her sweat-house and did nothing until the next day except to give the E. and the S. their meal. There is some difference in the accounts here. No. 2 said that neither E. nor S. partook of any food the day before the ceremony, but in another place, discussing meals afterwards, she said that they had not eaten since the night before it occurred.

Early in the morning of the day of the ceremony the women and chil-

dren living on either side of the river moved way up the mountainsides. That day none might eat at Amaikiā'ram, man, woman or child, not even the E., S., or A. Even the people as far away as Kat'emi'n joined those living at Amaikiā'ram in the general migration to the place called I'rurā'-wac'rīhirām. Men not immediately connected with the ceremony could remain at Amaikiā'ram but might not eat there. Probably five or ten such men would remain. They would shout in the early morning for the rest to move up the hill.

Some of those who had been in the habit of visiting the E. in his sweat-house then informed him that the fish was ready. Some of them started to "mark" the E.—that is, to paint him for the ceremony. His body and all over the face, his arms and his legs, were painted red. A black mark was drawn from ear to ear across the nose, about the width of a finger. That was all. No. 2 said the red rock (ochre?) which was used for the paint was obtained way up the Klamath and that the black paint was made from bear or deer grease mixed with soot taken from the sweat-house.

The S. was also painted red all over but had a horizontal line across his chest from armpit to armpit and three rings of black on each arm, one at the armpit, one at the elbow, and one on the forearm near the wrist. He also had a black ring on the calf of each leg but no marks on his face. Each man wore only an apron of buckskin but No. 1 added that the E., at least, wore a mink skin on the head and one eagle tail feather standing up at the back of the head. She said that the E. was barefooted. His hair was gathered in a knot at the nape of his neck and tied around with a piece of hand spun Indian twine and the feather was stuck upright in it. The buckskin was tied about the hips with a piece of string.

The woman anointed herself a little with marrow from the leg of the deer or any other bone, on her face, chest, and arms. She dressed her hair by parting it in the middle from the forehead straight over the crown of her head to the nape of the neck, drawing the hair to either side over the ears and folding it into a series of loops which she tied near the center with strips of buckskin. She wore a dress of buckskin ornamented with pieces of abalone shell tied on which struck together as she moved and so informed persons of her coming.

The E., his helper, and the woman remained in the respective sweat-houses until the sun was midway between rising and setting, a time known as *šu'paha'ā'tcūp* (midday). When the men were ready No. 2 said they started to sing as a notice that they were about to depart. Only the E. and the S. sang.

SONG 1. SUNG BY THE MEDICINE MAN BEFORE CROSSING THE RIVER TO MAKE THE SALMON SMOKE.



When they had finished they went out of the house to the canoe to cross the river. The E. carried under his right arm a bag containing the two sticks for making fire (*šmyer'icrihar*), some Indian tobacco (*iñē'rāha*), the medicine he would cook the salmon with (*máh'a'naw'*), his pipe (*úhurām*), and a *yuhírām* or knife with which to clean the fish. The knife was made of flint (*šā'a'k*). No. 2 said that the bag was made from the skin of a river-dwelling animal called *šápíhin'*⁷tc, now extinct. The skin was not slit the length of the animal but across the thighs to make the opening of the bag, and the mouth was sewed shut. Lacking such a skin, others might be used. According to her, the bag was called *wík'a'po* and was carried under the right arm by a strap passing over the left shoulder. No. 1 stated that the bag was called *wík'up'est'* and that it was made of some sort of straw and sticks, very old. She said that bags of the same sort were used by the Orleans Bar, Somes' Bar, and Happy Camp people. Possibly each E. used whatever bag he had. The S. merely carried his pipe.

No. 1 also stated, contrary to No. 2, that the E. and the S. left early in the morning to cross the river, when it was just beginning to grow light, as soon as the sun reached the top of the ridge. They went without eating. It did not make any difference how high the river might be or how difficult the passage. They went anyway. Ordinarily the E. did nothing but sit in the boat and protect his buckskin garment and his bag from the water, while the S. paddled, but if the water was high and the going difficult, the E. might lend a hand. The woman, according to No. 2, remained behind in her

sweat-house and hid her face after closing the entrance tightly. From the time that the two men left the sweat-house they were supposed to maintain absolute silence. It was thought that if they spoke they would not live long. (No. 2 had two sons, both of whom talked when performing the ceremony and both are now dead.) They landed on the opposite bank at a point quite a little above where the fire was to be made and proceeded down toward Ike's until they reached a certain big rock. Here the E. removed some of the Indian tobacco from his bag and scattered it broadcast, a little in each direction, some toward the water, some up-hill, etc., but not to any special number of directions nor any special number of times. (Only No. 2 mentioned this and the points immediately following.) After having done this, he and the S. climbed over the top of the rock in front of Ike's house, and went toward the river over a special trail to the rock mound place where the fire was to be built. No. 1 gave the name of this as *Wu'rciak*, stating that it was at the ranch called *Acā'namka'rvk*. No. 2 alone said that here the E. left his bag beside the waiting salmon and that both he and the S. went to the river and bathed. When they returned, the E. made the fire. She said that the S. watched him make it but No. 1 declared that in all their proceedings whoever was not working hid his eyes and covered his face. Both informants agreed that they did not speak. No. 2 thought that the E. might breathe while making the fire with the firesticks but that when the S. cut up the salmon he must not breathe. No. 1 said that no songs were sung, and No. 2 did not mention any. From here the accounts differ considerably, so I will give both.

No. 1's account.—The S. cut up the salmon with a flint knife, first cutting off the tail. He put that down and said to himself ("just thought it") "*ip'!vn*" (tail). Then he cut the back and said to himself, "*át'c*"; then the fat breast and said, "*t!ak'vax*," and then the head and said, "*áxavá'a*." He had placed them in a row, and then picked each up in order, to cook it while the E. sat down and waited. The S. speared each piece with a stick which served as a spit, one end of which was driven into the ground in front of the fire. It was turned as required. When the *ip'!vn* was done, the S. ate it but could drink no water and might eat nothing else. If he consumed as much as half of it he was lucky. But it was fat salmon and would not taste very well. Some of the men who had been S. could eat only one bite. It was claimed that if the S. could eat a whole one he would be rich all his life but none could do it because the fish created a thirst and the S. might not drink. He must cook the whole fish, however. The E. kept his buckskin over his eyes and did not watch the S. eat but he did smoke his pipe. What the S. could not devour he laid in a pile. Then he picked up a little stone and

hit the E. with it and then sat down and covered his eyes while the E. arose and jumped around but did not talk. The E. put more wood upon the fire and the cooked salmon was laid upon it, together with roots of all kinds the E. had in his bag, which were used to make medicine. The burning mess had a horrible smell. (No. 1 went there once and she knows!) While this medicine was being made, the people up on the hillsides dared not look down on the smoke ascending to the sky. All up and down the river the people hid their faces. They smelled the smoke a long time until in the evening. This ceremony was called medicine-smoke, *ṣar'uk'ā'mkuf*.

The S. hid his eyes while the E. burned the remains of the salmon and when it was done the E. hit him with a small piece of stone and they prepared to go home. Neither had seen what the other had done. They went back over the path and climbed into the canoe, the E. carrying his bag. The S. propelled the boat home and then No. 1 said it was just as if they did not do much any more—as if things were all over. The E. returned to the sweat-house and the S. accompanied him. If he hoped for luck the S. ate no supper but the E. could have a meal of acorn mush and dried salmon, which the A. prepared. The other fish, which were caught before when the men were fishing for the salmon for the ceremony, were dried. They were also called *ıcia't!* This fish was forbidden to most of the people for ten days thereafter. They were afraid to eat it, but those who were not afraid would do so as if it were some sacred big thing, and would serve it in a special big stone dish. Such would be the important and good old people of the tribe.

After his supper the E. returned to the sweat-house weak and tired. From the time that the ceremonial fire was made he was allowed two meals a day. The S. went without his supper but the next morning he could have breakfast. Both men remained in the sweat-house for ten days after the ceremony, waiting for the dances. They were not allowed to eat any of the fish that were being caught in the river until after ten days had elapsed. They would count off the time as the Karuk did, on the fingers of the two hands. Thus, they would say:

- 1—*yis'θa*, counting the little finger of the left hand
- 2—*a'ḫhak*, counting the fourth finger of the left hand
- 3—*küy^urā'k*, counting the third finger of the left hand
- 4—*pī's*, counting the second finger of the left hand
- 5—*trop*, counting the thumb of the left hand
- 6—*ıkri'vıkⁱ*, counting the thumb of the right hand
- 7—*ḫakini'yıkⁱ*, counting the second finger of the right hand
- 8—*kuyurū'kını'yıkⁱ*, counting the third finger of the right hand
- 9—*tropatic'ā'mni*, counting the fourth finger of the right hand
- 10—*itra'hier*, counting the fifth finger of the right hand

Note: All the r's in these words are rounded into a dull trill.

At the end of the first five days it was allowable to cook the salmon, *cia't'*, which the people had been catching during this time. Before this it was forbidden to boil the fresh fish. One woman, the oldest in the house, cooked them with hot rocks and water (i.e., they were boiled). The smoke ascended. Then all the other people went away so as not to see the steam. The one woman who cooked the fish never looked up. She did not have a special fire. She and those of her family could eat this salmon but the E. did not receive any of it.

No. 1 added that the fishermen felt that they just *had* to catch salmon during those five days. Their whole future in fishing depended on their success at this time. If they did not succeed they were out of luck. At the end of the fifth day some of the family which had partaken of the cooked fresh salmon would take one salmon from Ike Falls (*Amaikiā'ram*) raw and whole and give it to the oldest people down at Orleans Bar. The young people kept away from it. They were afraid to eat it, believing that evil would ensue, such as snake bite, a hurt, a burn, etc., perhaps even death. The old people, however, were very glad to receive the salmon and eat it. Then the Ike Falls people went back home.

No. 2's account.—When the fish was brought to the place where the fire was to be made, it was laid with its nose close up against a stone at right angles to the axis of the body of the fish. It was thought that if, when the S. cut it up, the head slipped past either end of the rock or if it lay so that the head projected beyond the rock at either side, the main part of the salmon run would slip past Ike's Falls unnoticed by the fishermen and only be discovered far upstream. First the E. made the fire. Then he sat down upon a rock. Formerly a special rock there served as his stool, but that is gone now. He placed his pipe which he had with him down on the ground beside him and folded his arms across his knees and watched his helper. He did not cover his face nor close his eyes. The S. then cut up the fish. It was handled on the fire with two madrone wood sticks or pokers called *šap'uk* which had been cut by the woman who procured the wood for the fire. It was cooked by being laid right on the coals. The tail piece was cooked first, and then carried by the S. and placed beside the E. on another rock. The belly part was not cooked at all but laid on a rock on the other side of the E. Part of the back was left adhering to the head and that piece was cooked last. The S. did not attempt to eat the fish until the E. himself pointed to him and to the fish and motioned him to do so.

In the throat of the salmon, where the tonsils of a man would be, is a piece resembling a heart which No. 2 says is the heart of the fish (*tiuk'!-nu'pātč*). This the S. ate first. A little farther down in the salmon is another

piece (at^uwaf) said to be the liver. The S. ate that next. Sometimes he did not like eating it for it is bitter, but he had to eat it. Then, if he did not want the rest of the fish he need not eat it but this much he must devour. This liver is so bitter and nauseating it is likely to make a man vomit. If the S. did so it was thought he would be lucky in future. On the other hand, while eating it might make him very sick, he might not be able to vomit and then he knew that he would be very unlucky.

That part of the fish which he could not eat had to be put on the fire and burned, together with the roots which the E. brought over in his bag. These roots might have been gathered by anyone, possibly a long time before, not necessarily just before the ceremony. They might have been kept for years. Just one variety of root was taken called Ma'h^aan' eh^uwⁱⁿ' am, beyond the mountain which has the rock slide that may be seen from the falls. The pieces of roots were laid on the blaze in chunks as they were gathered, not ground up or worked over with other materials into a medicine. The roots were never used for any other purpose than for the salmon smoke and No. 2 did not know how the Karuk ever came to select them for this purpose. Burning them with the salmon created a dense smoke and while it was in the air no one might look. In fact, during the day the constant admonition had been:

Ṣar'uk	ā'mkef	ṣai'fat	im·ṭ'sti.
Down river	smoke	don't	look.

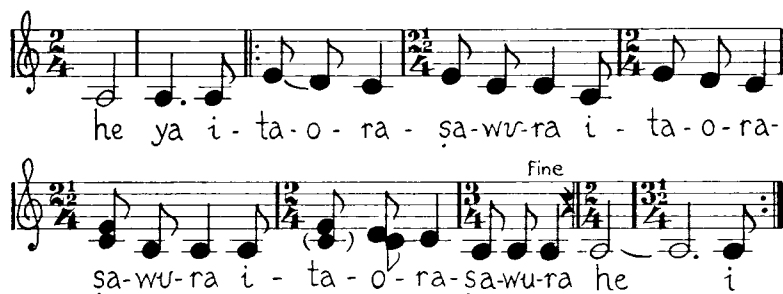
This rite of burning was called ṣar'uk'ām'kef. The E. and the S. might both look at the fire but neither was supposed to look up at the ascending smoke. As the roots and fish continued to burn the smoke column soon became deflected and followed along by the river, hanging low right over the water. After the river was all covered over this smoke would drift back to the fire and then follow in one small line down the river until it had all disappeared.

After some time the fire ceased to "burn up quick," and before it all burned out the E. and the S. started to bury it under a rock mound such as was mentioned as being at the spot when they arrived. The men built the mound on top of the fire. The smoke would escape from it in puffs or clouds if they did not wait until the fire burned down. All charcoal and any traces of the fish must be completely covered. As soon as the mound was completed the two men were ready to start home. The E. carried back with him what tobacco was left. He did not use it for any other purpose at any other time and it would be kept until the next year. He did not take back any roots, however, for all of those were burned.

They returned to the sweat-house, and on their arrival stamped their

feet so that those men who had remained in it would hear them and know that they had returned from their mission. Then the men who were waiting inside began to sing.

SONG 2. SUNG AT THE RETURN OF THE MEDICINE MAN AND HELPER AFTER BURNING THE SALMON.



(This song is repeated ad libitum but "not very many times,"—"two or three.")

The S. could thereafter sing that song at any time within the next day or so but no one else might. Usually he would sing it only two or three days but there was nothing to prevent his singing it continually if he so desired. When the men finished the song they emerged from the E.'s sweat-house and the E. and the S. entered. When they were safely inside any one of the men who had been in the sweat-house shouted:

Tcam' i kík'! pa'wiyi'hék i'.

All right you can come back.

And then the people who had spent the day up on the mountainsides came down on both sides of the river and returned to their homes.

While the men had awaited the return of the E. and the S. from across the river they had not been idle. They had taken arrowwood sticks and shaved them with sharp mussel shells until they had accumulated a big pile of shavings. These were used by the E. and the S. immediately on their entrance into the sweat-house, to remove the paint from their bodies. The shavings were then carefully gathered up by the E. and put into his bag although he might at this time give away some of them to anyone who might request them if he felt in a gracious and generous mood. The recipient would use them as magic medicine in trapping during the next winter. If the E. did not wish to give any of the shavings away, custom did not demand that he should. The remainder of them were supposed not to be touched by anyone until the following year, and then the man who became the E. removed them from the bag and hid them out in the brush

somewhere. Each year the E.'s bag and equipment were handed on to his successor, including the firesticks, the pipes, tobacco, etc.

If any salmon caught before the ceremony were not taken away from the fishing ground the people went down at this time to get them. If puffs of smoke were still escaping from the rock pile across the river there was no harm at this time in looking, for the fire was no longer *āk'!sən'wa*. The salmon is no longer *icia't!* but is *'ā'ma'* and so eatable as far as the elders of the tribe are concerned, although they could have eaten *icia't!* even before the ceremony if they had so desired.

The E. and the S. bathed about four times during the night immediately after the ceremony.⁵ The next day they refrained from food until about four o'clock in the afternoon, when they received a dinner of acorn soup which might be as watery as they chose, but they were not allowed to drink any clear, pure water. Up to this time they had had nothing to eat or drink since the night preceding the day of the ceremony, except that the S. had partaken of the fish. The wood carrier, A., prepared this meal for them and they were also allowed roots at this time, although the acorns were the principal article of diet. Ten days must elapse before the E. and the S. might taste the fresh salmon but the rest of the people might, according to No. 2, eat it any time after the ceremony. (Presumably she meant any time after the first five days had elapsed.) The two men and the woman remained in their sweat-houses for these ten days. But five days after the ceremony the woman boiled fresh salmon with hot rocks in a basket which was ordinarily used for boiling acorns. She cooked this salmon for anyone who came and asked for it. Anyone might catch the fish which she cooked. She had three stones, which she heated in the fire. She made the fire herself with wood which she gathered. The wood might be of any kind. The three stones had no special name or significance and were not kept from year to year. The woman shaped two sticks of green maple wood for pokers with which to manipulate the rocks, transferring them from the fire to the basket and back. They were called *šap'·ık* like any other fire poker.

On the tenth day when the A. was done with the *šap'·ık* and the rocks, before she left the sweat-house for her own home she took them to a big rock called *Sap·ık'pıcv'n"wā'ram* about a mile up the hill above the sweat-

⁵ Something like an Indian devil used to bother them when they went to bathe at night after the day of the ceremony. Every time they went they heard something, or a rock would be hurled at them, or they would hear crying without being able to locate it. It scared them. No. 2's son acted as E. one time and was similarly bothered when he went to bathe. So the next time he asked for the loan of a gun and said that he would shoot whoever it was. But the gun was not brought to him and he did not hear anything after that, so he and his family concluded that some of the people had been guilty, possibly some of the boys.

house and left them there. Then she was free to go home and at this time the E. and the S. also were done with the ceremony and might return to the general sweat-house and their ordinary occupations. When the E. left the sweat-house he had stayed in, no one might go near it until it was time to clean it and make it ready for the ceremony the next year. This refurbishing was done by the people who lived near the sweat-house and those who were specially interested in seeing the ceremony properly conducted. Even people as far away as Kat'emī'n might come and take a hand in the work.

During the ten days after the ceremony the E. and the S. might sing two more songs. They might sing them together at any time they felt like it. No. 2 did not know them but said that another woman did but she could not be induced to give them. No one else except the two men was allowed to sing them.

The salmon ceremony was followed immediately by a series of dances in which the people made merry. They are a part of the salmon ceremony only in that they immediately follow it. They have nothing to do with the salmon, however. The E. did not dance, for he was afraid that he might "kick up" all sorts of disease, but the S. could and did dance.

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IN A previous article in the *AMERICAN ANTHROPOLOGIST* I gave a rough general description of Ongtong Java, a coral atoll in the northeastern Solomon islands. It is made up of approximately a hundred small islands surrounding a large circular lagoon. These islands are inhabited by a Polynesian people somewhat similar to the Samoans. There are two tribes, each of which has a principal village. One of these villages is named Pelan, and the other Luangiua.² The tribes are made up of patrilineal joint families. The islands around the lagoon are owned by these joint families, but the property is vested in a headman, always the oldest man in the group. Each tribe has its king, and formerly it had also priests to officiate at ceremonies connected with the deities.

European influence began in 1870, but was not considerable until after 1900. The population was then estimated to be in excess of 5000. In 1928 the people had diminished to less than 700.³

Like most native communities, Ongtong Java had its sorcerers, though there were not many of them, and they never had the tremendous social importance that they have, say, in Africa. Today there is not one left, or at least no one has the reputation of being a sorcerer. Sorcery was never the topic of ordinary fireside conversation except in one instance of which I shall presently speak. My account is therefore not first hand, but is derived from what a few old men of the village told me.

The systems of black magic were the property of some of the joint families. The headman of the group was the sorcerer, and he taught the system to his relatives in order that his successors might have the same power as himself. The men of the joint family who stood closest to him in age knew as much about the subject as he did, they were able to use the spells if they wanted to, but generally it was only the headman who actually did this. The word for black magic is *pa'ava*, and that for sorcerer *kama e loa pa'ava*, literally, a man who knows black magic.

According to tradition all the systems were introduced from foreign

¹ Field research carried out under the supervision of the Australian National Research Council while the author held a Science Research Fellowship in the University of Sydney (1927-29)

² The *ng* to be pronounced as in "singer."

³ H. Ian Hogbin, *The Problem of Depopulation in Melanesia with special reference to Ongtong Java*, *Journ. Polynesia Soc.*, 1930.

places, either by visitors or by Ongtong Javanese natives who went abroad and learnt them. One system is said to have been brought by a man from the distant island of Maianga, who came to live at Ongtong Java, married and founded a joint family. The secrets of black magic he taught to his son, and they remained in the group until it died out some years ago. Another system was brought by a black (Melanesian?) woman who drifted to Ongtong Java in a canoe. She taught a local native some malignant spells which thus passed to his joint family. Two or three other systems were supposed to have been introduced from the Tokelau islands (Ongtong Java, Ko'olau). About 25 years ago, a man signed as a laborer to work at Roviana, New Georgia, Solomon islands. He learnt the black art from Melanesian natives there, and on returning used it against his countrymen. All the descendants of this man are now dead, so that it is impossible to say exactly what he did learn.

The belief that *pa'ava* came from foreign places might at first sight appear extraordinary, but when we examine other elements of Ongtong Javanese culture we find that *pa'ava* is not alone in this respect. The sorcerer was but one of the ritual specialists. Another was the man who had to carry out certain ceremonies over a log before it was fashioned into a canoe. This specialist was the headman of a joint family to which knowledge of the spells belonged, just as the sorcerer was also the headman of a joint family which had knowledge of spells of a different kind. Both of these systems of spells were believed to have come from foreign places in almost exactly the same way. So it was with the specialist who had to assist at the building of a new house, and so on.

When a sorcerer decided to kill a man, there were several ways in which it might be done. One was to get hold of something closely connected with him,—his hair, nail-parings, or saliva, the last being the favorite. The sorcerer watched where his victim spat, and subsequently took the wet earth and worked his spells over it. Very soon the man would sicken and, if not treated, would die. Another method was to make spells over some such object as a stone, a human bone, or a few grains of sand. During the night the sorcerer took this and either threw it into the house of the victim or buried it near the door. This was equally fatal. The third way was to make an effigy out of pandanus leaf and stick skewers through it. As each one was put in, the man is said to have felt a sharp stab of pain. Provisional black magic was also used. The sorcerer made spells over his property with the result that any one interfering with it became ill.

The spells, like all others at Ongtong Java, were direct appeals to the

spirits of the ancestors. The founder of each of the systems was, as I said, a foreigner, and his spirit was appealed to in the first case. Then came other appeals to the men who had practiced the magic, the forebears of the man using it at the moment. Since no one now practices pa'ava I recorded none of these spells, but over and over again I was assured of the truth of this statement. Since this is in harmony with what I know to be the case with other spells, I have no hesitation about accepting it.

A medium is always summoned when a man is taken ill. These mediums, who are usually women, allow the spirits of the sick man's ancestors to speak through them, thus revealing the cause of the illness. I have never been present at a séance when pa'ava was believed to be the cause, but I have frequently attended at other times. The medium or koulaiku (anchor of the spirits) first goes off into a sort of trance, and then the spirits speak through her mouth, using a voice quite unlike her natural one.⁴ I was informed that if pa'ava had been employed against the man, the spirits would announce the fact.

Unless we accept some supernatural explanation, it is clear that the koulaiku must already have been in full possession of the facts. This is not corroborated by informants, who naturally believe that the spirits are really speaking and that the medium is only their vessel. In the case of pa'ava probably what really happened was as follows. When a man was taken ill his relatives considered his actions to see whether he could possibly have injured a sorcerer. If so, the sorcerer was immediately suspected of having used black magic against him. Now at Ongtong Java one has little private life, and what is known to one's relatives is as a rule known to other people, including the koulaiku. All that the medium did was to confirm the relatives' suspicions.

When it was known that pa'ava was at work, there were three possible ways of dealing with it. A more powerful sorcerer might be called in to work counter-spells; the one who had made them in the first place might be persuaded to undo his work; or he might be actually killed.

Fortunately I found a man who knew exactly what would happen if a more powerful sorcerer were called in. I have no idea how he happened to know this, but he made no secret of his knowledge. A number of white coconut leaflets were tied together and oiled. Two similar leaflets were then put around the sick man's neck, one being called after the sorcerer who had caused the illness, and one after the sorcerer who was making the cure. The

⁴ H. Ian Hogbin, *Spirits and the Healing of the Sick*. Oceania, 1930.

latter took the bundle and waved it over the head of the man while he recited a spell. The particular one known to my informant ran as follows:

Angameilongu ke kama,
Meihala ke kama,
Kumangava ke kama,
Emangava ke kama,
moukala kea ngi halelo.
moukala kea ngi haku,
moukala kea ngi hui,
moukala kea ngi loli,
moukala kea ngi 'aka,
moukala kea ngi hangipapa.
kou Meilongu, Meihala,
auaiho nga ngi hui, nga ngi hali,
nga ngi lape, nga ngi haku, nga ngi loli,
kingo malili, kingo makala,
kingo e longo, he oka mangingi.

The four names are those of certain ancestors of the healing sorcerer, and it is they who are being appealed to. Kama is simply the word for man, the man Meihala, etc.; moukala⁵ is to sprinkle ceremonially. Then sea slugs and other things regarded as unpleasant are mentioned, e.g., loli, bechedemer; 'aka, snakes; and hui, coral points. A translation of the second section runs, "I ceremonially sprinkle you to remove slugs," etc. The spirits are then mentioned again by name and asked to remove these things from the belly of the sick man and make him well again, restoring to him clean bowels. These evil things were thought to be placed inside the man by the sorcerer's ancestral spirits. To restore the patient to health it was merely necessary to remove them by similar supernatural means, and then purify him with a ceremonial sprinkling. If the man recovered splendid presents were always made to the sorcerer who had made the cure.

Should no sorcerer be available to carry out this ceremony, the next best thing was to persuade the one who had made the spells to remove them. This might be done with presents of coconuts, taro, or mats. The last resort, to kill him, was apt to be so dangerous to everyone that it was seldom attempted.

Now let us take a few actual cases.

During the memory of the oldest man living at Pelau, the smaller of the

⁵ Cf. Maori word *tala*, to influence by charms.

two main villages at Ongtong Java, there had been eight sorcerers. One of the most famous was 'Ohou. One day a woman stole taro from the garden of 'Ohou's wife. Not knowing the actual thief, and being very angry, 'Ohou made spells against whoever it might be. Within two days a woman named Langiaka was taken ill and died. She confessed on her deathbed that she had stolen the taro.

All the coconut trees within the villages were owned by joint families. One day nuts were stolen from one of the trees belonging to Ke lopianga, the man I mentioned who had visited New Georgia. He suspected who the thief was and made spells against him. This man also died, confessing his guilt before he did so. On another occasion a man became seriously ill and sent his relatives with a present to Ke lopianga asking for his forgiveness because he had stolen taro from his wife's garden. The sorcerer accepted the present, and the sick man recovered. Ke lopianga naturally had protected all his property with provisional magic. It is nevertheless interesting to note that he was in no sense regarded as a social outcast, but took his place on all occasions on an equal footing with ordinary men.

Ke haki was the headman of a joint family which had knowledge of the black arts. It came to his ears that his wife was carrying on an affair with another man. He made spells against this man, who, sure enough, was taken ill. His relatives sent presents to Ke haki, but he refused to accept them. The sick man grew steadily worse and finally died.

There were several other well known cases of pa'ava being employed against men with whom the wives of sorcerers had been unfaithful, and also others of its use against men who had interfered with their daughters.

A comparison of these cases shows that in every one of them the sorcerer had good reason to be angry with the man against whom he made his spells. Any man, moreover, was likely to be angry on such provocation as loss of his property or interference with his women-folk. Though theft, adultery, and intrigue are regarded as more or less serious antisocial acts, there was no legal mechanism for the punishment of the offender. Generally it was left for the injured party to exact his own vengeance. For instance, the wronged husband might, and sometimes did, kill his wife's lover. A certain amount of risk attached to this because there was a likelihood of his relatives taking vengeance on the murderer. Whether they did so depended on the popularity of the two men, their social status, and the particular circumstances of the act. Sometimes adulterers went unpunished, sometimes they met a fate in which everyone acquiesced, and sometimes the instrument of that fate himself was made to suffer.

In the cases quoted, black magic was simply a means by which anti-social acts were punished. It was said that the sorcerer was in the right and the man against whom his spells were directed was in the wrong. So far then, pa'ava has appeared as a means of exacting punishment when certain rules were broken, that is to say, it provided a sanction for those rules and supplied a reason why people should obey them. Theft and the other acts mentioned were considered wrong by the community, and that was one of the reasons why they were not of too frequent occurrence. Black magic was still another of these reasons; men must have been prevented from breaking the law to some extent because they feared that sorcery might be employed against them if they did.

The best piece of specific evidence supporting these assumptions is the one case where pa'ava was suspected while I was living at Ongtong Java.

It was not until I had already been there a few months and had made some acquaintance with the language that I decided to visit Pelau village. Perhaps a week before I arrived there, Hangava, one of the leading men, had died. He was too old for active work and had remained at home to look after the children while the men had gone fishing and the women gardening. While they were away, one of the children had accidentally set fire to the house. Hangava escaped, but a few hours later he was taken ill and in two days he was dead, largely through shock. His relatives suspected sorcery because of the speed with which events had followed one another. The day after I arrived his son began to dig in front of where the house had stood. Sure enough, a human bone was found within a foot of the surface. The whole village was very much upset, and for a couple of days no one spoke about anything else. Everyone said that here was proof of pa'ava, and they began to ask, first, who could have done it, and second, who could have borne a grudge against Hangava. There was one family which had reasons for disliking him, but they were ruled out because they had never been in any way connected with sorcery.⁶ In the end, the most balanced opinion regarded the presence of the bone as a mere accident, for, men said, there is only this one family who could possibly have had any reason for using pa'ava, and they certainly did not do so. The relatives, it is true, were unconvinced and were still looking for a possible culprit months afterwards.

So much then for the pa'ava working on the side of law and order. But there is yet another side to the matter.

⁶ This bears out a statement I had recorded previously to the effect that sorcerers were never approached and asked to use their powers for the benefit of others.

The most sacred persons at Ongtong Java were the priests (maakua), but even they were not proof against black magic. One of them became involved in a disturbance with a sorcerer. Their sons had fought one another over some toy canoes, and the fathers took sides. The disturbance grew more and more heated until finally the maakua took an axe and cut down a young coconut palm belonging to the sorcerer. It was taboo for this man to lay hands on his sacred person, so he determined to take vengeance in another way. He made a pandanus leaf model of a man and called it by the name of the maakua. During the night he took it and buried it in the cemetery. All the precautions of the relatives of the maakua could not save him, and he died some time later. Nothing at all happened to the sorcerer.

Even here pa'ava was scarcely employed for ends that were entirely antisocial. When I asked my informants whether they thought the sorcerer's actions justified, some of them said they did, while others held that men ought not to concern themselves with children's affairs.

There was one sorcerer, however, who did use his powers to vent his spite on all and sundry. I do not know if he was always successful, but certainly he was at times. As one might expect, the people punished him by avoiding him completely, and in this way he became a sort of pariah, everyone withdrawing as soon as he approached. This must have made his life extremely difficult, for much of the food can only be secured by communal effort. Another sorcerer, Ke ingoa, was responsible for killing a woman who had refused to marry him. The exile was not so complete in his case, and in the end he was gradually reaccepted, though with some hesitation. According to my informants, it was a long time before he was invited to join in a fishing expedition, and until his death no one would ever lend him his pipe to smoke.

In one case an unjustifiable use of sorcery led to even more serious consequences. The sorcerer had himself been guilty of theft. He had been caught red-handed by the headman whose property he was stealing and given a slight wound. In revenge he made spells against this man. At the first twinge of pain the latter sent his relatives to the sorcerer's home to seize him. They bound him hand and foot and threw him into the sea. It is unlikely that this would have happened had the headman not had a powerful joint family behind him. Another famous sorcerer, Ke pale-i'a, also met a similar fate; he was speared when he attempted to bewitch an enemy. In this case, too, the enemy happened to be an exceedingly important man in the tribe.

Black magic was, in the main, employed on the side of law and order.

It gave a sanction to moral rules and thereby helped to maintain social stability. At the same time, because it was a force which only some people had the power to use, occasionally they took advantage of it to work against the interests of society for their own private gain. There were still other sanctions which, though ill-defined, tended to prevent this. These sanctions provided the penalties of social disapproval, hostility, and even death. Only a few were prepared to run the risk of incurring such penalties. So it was that the private individuals who wielded the social force of black magic were regulated and controlled.

SCHOOL OF ECONOMICS
UNIVERSITY OF LONDON

A MAYA CALENDAR FROM
THE ALTA VERA PAZ,
GUATEMALA¹

By J. ERIC THOMPSON

ANNUAL calendars, consisting of eighteen months of twenty days each and five odd days at the end of the year, have been reported from various Maya peoples. The most famous of these is that in use in Yucatan at the time of the Spanish conquest and used by present-day writers to designate the month signs found on the monuments of the Old Empire region. Actually, there is no evidence that these names obtained in the Old Empire. Indeed, one might state with some assurance, although positive evidence is lacking, that the Yucatecan names were not employed.

In addition to the Yucatecan annual calendar, the names of the months are also known for the Cakchiquel, Quiche, Pokomchi, and Chuj of Guatemala, and the Tzeltal and Tzotzil of Chiapas, Mexico. The calendars of these peoples are of the same pattern, but in most cases the actual names of the months differ.

Recently the writer came across a calendar of this same general pattern attributable to the Kekchi. The Kekchi are a virile and increasing people of Maya stock. During the past three centuries they have greatly extended their ethnic boundaries, absorbing linguistically scattered groups of Pokomchi, Chol, Lacondon, and Mopan Maya. At the present time they occupy a large part of Guatemala, including most of the Alta Vera Paz department, a part of the Baja Vera Paz department, and the southeast sector of the Peten department. In recent years they have overflowed into British Honduras, and now are in firm occupation of a belt across the south of the colony. They are believed to number somewhere in the neighborhood of 85,000, but it must be remembered that a large number of these Kekchi-speaking peoples are not racially Kekchi.

Some of these foreign groups absorbed by the Kekchi retain certain distinctive customs, beliefs, and peculiarities of pronunciation and grammar, but on the whole they form a homogeneous group.

In the catalogue of the Gates collection^{1a} there is listed (item 1024) a

¹ It has just come to the writer's knowledge that Dr. William Gates, in his forthcoming work, *A Dictionary of Maya Glyphs*, treats of the same Kekchi calendar. The writer has no idea to what extent the two presentations duplicate each other, but he wishes to say that should such duplication exist, it is the result of conclusions reached independently by both Dr. Gates and the writer.—J E.T.

^{1a} The William Gates Collection. Manuscripts, Documents, Printed Literature relating to Mexico and Central America. . . American Art Association, New York, 1924.

manuscript described as "Manuscript. Kekchi Native Calendar, of good and bad days, 4 to 16 pages. Photographic copy. A remnant of the native divinatory ritual." This photographic copy is now in the Department of Middle American Research, Tulane University.

An examination of a photostat copy showed an almanac of a Christian year with a number of feast days of the Catholic Church marked against the respective days on which they fall, a number of days marked good or bad, and other remarks in Kekchi which also appear to indicate native feasts and festivals. The calendar carries no recognizable date, and both the handwriting and spelling are poor.

The writer's eye was caught by a number of names scattered through the text, alongside of which in every case was placed a cross. It was soon apparent that the names represented a native calendar of typical Maya pattern. One month was missing, probably through an oversight, and two months were displaced one day. The calendar was arranged as follows.

Jan.	10	Yax	Jul	28	. . . .⁴
Jan.	30	Zac	Aug	3	Icat
Feb.	18 ²	Chac	Aug.	23	Chacc ^{at}
March	11	Chantemat	. . . . .		⁵
March	31	Uiniu ³	Oct.	2	Cazeu
April	20	Muhan	Oct.	22	Chichin
May	10	Ahquicou	Nov.	11	Ianguca
May	30	Ccanazi	Dec.	1	Mol
June	19	Olh	Dec.	21	Zihora
July	9	MAHI			

Several of these month names are the same as those of the Yucatecan calendar, and retain the same order, but the five nameless days have been shifted forward one month. The month Mahi corresponds to Pop, and, indeed, in the text Mahi is written in capital letters, as though to call attention to the fact that it is the first month of the year.

There are also correspondences to the Pokomchi calendar of Narcisso.⁶ This Pokomchi calendar is a twentieth century survival, and it is clear that

² This is a mistake for February 19.
³ This text is not very clear at this point, and the name may be wrongly transcribed.
⁴ The five nameless days. There is a cross, but no name is given. Sⁿ is written against July 29th, when the five nameless days should begin. This may be a contraction of santo "holy," or just possibly a contraction of sin nombre "nameless."
⁵ The name for the month corresponding to September 12 has been omitted, presumably through carelessness.
⁶ Franz Termer, *Zur Ethnologie und Ethnographie des nordlichen Mittel-Amerika* Ibero-Amerikanisches Arch., 4: 394-395, Berlin, 1930.

at an earlier period the resemblance was closer. This is shown by the two Pokomchi months which Miss Breton⁷ lists from the Pokomchi vocabulary attributed to Moran, and written about the end of the seventeenth century. According to this vocabulary the month Canazi ran from June 4 to June 23, and the month Petcat from August 3 to August 22. The displacement of the nameless days has thrown this out. If this is discounted, it is clear that the Pokomchi and Kekchi Canazi months correspond to a day, and the Pokomchi Petcat corresponds to the Kekchi Icat, both beginning on August 3, and, as we shall see later, both incorporating the important root cat.

It would appear that this Kekchi calendar, as well as the Pokomchi calendar of Moran's vocabulary, were frozen into the Christian year, to use Dr. Spinden's expressive phrase, some time in the middle of the sixteenth century. If we shift the five nameless days from their present position to immediately after the month Olh, O Mahi falls on July 14, and assuming that O Mahi coincided with the Yucatecan O Pop, this would have occurred between the years 1552 and 1556, or the four preceding years, if the Yucatecan calendar began on 1 Pop.

The first attempt to conquer the Alta Vera Paz region was made in 1535, but it was not until 1549 that the native life was disastrously disturbed by the reductions. In this year the natives of a great part of Guatemala were removed from their old homes, and settled in mission towns under the direct care of the priests. Such a move might very well have proved fatal to the proper functioning of the calendar, and the fact that the date reached, by assuming that O Mahi and O Pop coincided, agrees within about three years, at the outside, with the great reductions is evidence that our assumption is probably correct. Below are given the three calendars, placed side by side. The Narcisso Pokomchi calendar is adjusted so that the months correspond according to the Moran vocabulary.

<i>Yucatecan</i>	<i>Kekchi</i>	<i>Pokomchi</i>	<i>Moran</i>	<i>Pokomchi</i>
Pop	Mahi	Kanjalam		
.	Nameless	. . . . .	
Uo	Icat	Makux		Petcat
Zip	Chaccat	Kaseu		
Zotz	. . . . .	Kanasi		
Tzec	Cazeu	Kanajal		
Xul	Chichin	Tzikin Kij		
Yaxkin	Ianguca	Mox-Kij		
Mol	Mol	Tij-txejk		

⁷ Adela C. Breton, *Pocomchi Notes*, ICA 19: 545-548, 1915.

.....	.....	Nameless	
Chen	Zihora	Yax	
Yax	Yax	Sac	
Zac	Zac	Tsi	
Ceh	Chac	Txip	
Mac	Chantemat	Txantemac	
Kankin	Uniu	Uniw	
Muan	Muhan	Muwan	
Pax	Ahquicou	Tam	
Kayab	Ccanazi	Sac-gojk	Canazi
Cumhu	Olh	Oj	
Nameless	.....	.....	.....

The months Yax and Zac are common to all three calendars, as, too, is Muan in slightly different form. The equivalent of Mac in Pokomchi—Txantemac—has the same root, and the final t in the Kekchi equivalent month may be due to a slip of the pen. The new calendar, however, seems to stand about halfway between the Yucatecan and Pokomchi calendars. It shares in common with the former the month Mol, and with the latter the months Cazeu, Uniu, Ccanazi, and Olj, allowing for slight differences in spelling and order.

Doubtless neither of these two calendars originated locally, for had such been the case, the month Yax would have been written Rax, to conform to Pokomchi and Kekchi spelling. It is clear that these calendars must have been borrowed from some nation, which did not use the letter r. Only one month has a letter r in it, and this, as we shall see, is capable of explanation.

It is interesting to note that the month Chac and the month Chacc^cat both contain the syllable Chac, which is apparently a Maya root signifying red.⁸

Now the Maya hieroglyph for red is the same as the superfix for these two months, which in the Yucatecan calendar correspond to Zip and Ceh—words which in the Yucatecan language have no connection with this color. This identification is strengthened by the fact that the two months that precede Chac in both calendars mean green and white respectively in all Maya languages, and Chantemat may contain the archaic root for yellow.

If Chac represents the superfix of Chacc^cat, one would expect the body of the glyph to mean c^cat or cat (the scribe is rather vague as to the difference between c^c and c). This is exactly what we find, for the main part of

⁸ Karl Sapper in *Das Nordliche Mittel-Amerika*, 433, lists the following words for red used by the different Maya peoples: Tzakni, Chacni, Chak, Chakak, Chuk, Chocho k, Choch, tzaj, Tzoj, queak, Quiak, Caj, Cak, Quik, Quiek.

the following month is similar in form, both having identical cross bands, and its name is Icat (in Moran's Pokomchi Petcat). However, when we take it a step forward, and identify the superfix of Icat as i, we are met with an obstacle. The same superfix is found in the ninth month, corresponding to the Yucatecan Chen, but the Kekchi name is Zihora, and there is no apparent connection. However, it is probable that Zihora is a more modern substitution, for the word contains the letter r, which we have seen was not adopted in the case of the month Yax, which normally in Kekchi becomes Rax. Apparently the original calendar was used by a people who did not use the letter r, and only after it was taken over by the Kekchi was the month name Zihora, containing the letter r, brought into use.

We have seen that in some points this new calendar is probably nearer the archaic calendar of the Old Empire than that in use in Yucatan at the time of the conquest. In others, such as the common use of the names Mol, Muan, Yax, and Zac they are probably equally close to the original, while in one or two names, notably Yaxkin, the Yucatecan calendar is clearly closer to the original.

In all probability the archaic Maya calendar will only be reconstructed by a careful comparison of all the calendars that have survived. Unfortunately it is clear that in several of the calendars months have been displaced, and here we are at sea, for the Yucatecan names may also have been displaced in some cases for all we know to the contrary.

We have seen that, although this calendar was in use among the Kekchi, the fact that Rax has not been substituted for Yax shows that it was not of local origin. To whom can we attribute it?

The only neighbors of the Kekchi who do not employ the letter r are the Chol, who until the seventeenth century occupied a broad belt to the north of the Kekchi. It is possible, then, that this Kekchi calendar is of Chol origin, and support for this opinion can be found in the fact, well attested by history, that large communities of Chol were absorbed by the Kekchi in the past three and a half centuries. The fact that the present-day Chol names for white and red are suk and chuk is not an argument against this attribution, for the substitution of u for a is clearly a recent change, which is still incomplete.

Gates⁹ has already suggested that the Chol may have been the Maya of the Old Empire, a view which the writer is inclined to accept, although definite proof is lacking. Be this as it may, it is an interesting point that the

⁹ W. Gates, *The Distribution of the Several Branches of the Mayance Linguistic Stock*, in S. G. Morley, *The Inscriptions at Copan*, Appendix 12, Carnegie Institution, Washington, 1920.

calendars, which are closest phonetically to the hieroglyphs, are those which are found among the peoples living closest to the Old Empire region — the Yucatecans, the Tzeltal, and the calendar which we now provisionally assign to the Chol. Less closely related are the Pokomchi and Chuj calendars, which belong to people who live at a greater distance from the Old Empire region, and the calendars of the Quiche and Cakchiquel, who are the farthest removed from the Old Empire region, have very little phonetic relation to the hieroglyphs.

Probably all these peoples had their distinctive calendars, derived from a common archaic calendar, long before the break-up of the Old Empire. Indeed, the Old Empire may have been composed of a number of distinct linguistic stocks with separate names for the months, but using the same hieroglyphs. If such were the case the differences would have been much less than they are today, for the divergences of the past thousand years would have to be discounted, and, undoubtedly, the severance of facile communication between groups after the disruption of the Old Empire, and, more so, after the Spanish conquest furthered disagreement.

It has already been pointed out that crosses are juxtaposed to the month names in this new calendar. In only one other place are crosses found. Opposite November 8 are two crosses, but no name. By analogy this day should have been of very great importance in the ancient calendar. The equivalent of November 8 in the native calendar is 17 Chichin, which in turn corresponds to 17 Xul in the Yucatecan calendar. Bishop Landa tells us that on the evening of 16 Xul began the great feast of Kukulcan, the Yucatecan Quetzalcoatl. This was probably the most important annual feast in Yucatan, and was associated with the great Mexican feast of Panquetzaliztli. It would appear that this was a feast of very great importance, common to all the Central American and Mexican peoples. In Yucatan the feast was known as Chickaban. It is just possible that there is some connection between this name and the month name Chichin.

A number of names, apparently associated with numerals, may mark days in the sacred 260 day calendar. Oxlauhucacchan, for instance, might correspond to 13 Chicchan of the Yucatecan calendar. Uuck Chab, also, might be a day sign, but so far the writer has not been able to convince himself that such is definitely the case.

FIELD MUSEUM
CHICAGO, ILLINOIS

THE PROBLEM OF THE CULTURE
FROM THE ARVILLA
GRAVEL PIT

By ALBERT ERNEST JENKS

AT THE Andover meetings of the American Anthropological Association, 1927–1928, Mr. Barnum Brown passed over to me a hope long dead. In 1909 and for a few succeeding years that hope had been to the American Museum of Natural History a fond one, but it had had no fulfillment. For me the case held additional allurements, namely, those of a well-known limited home area which, with scarcely distinguishable surface variations, spills its streams indifferently into Hudson bay, or the gulf of Mexico, or the Atlantic ocean by way of the Great lakes. Perennially I attacked the problem at close range—at first with little success. However, after three years and three months I arrived at the trail's end and recovered a considerable amount of dependable information which has created important scientific interest.

It is not the purpose here to present the entire history of the case. I do, however, greatly desire whatever suggestions others may be able and kind enough to contribute toward the elucidation of the facts here given. Toward this end, I endeavor to present the essential facts now in hand.

Mr. E. K. Kennedy in 1908 was Division Road Master of the Dakota Division of the Great Northern Railway. He had charge of getting gravel from the so-called Arvilla Gravel Pit in the Red River valley, in North Dakota. During the season's work, about one hundred graves were discovered in the gravel. Though it was the business of those at the pit "to dig gravel" rather than to do archaeological work, yet a number of the graves were carefully dug out by hand. Definite knowledge resulted, which I first obtained in March, 1931, from Mr. Kennedy, and which I have since confirmed by the written statements of two competent gentlemen now in larger administrative positions than they occupied twenty-three years ago—when their work took them frequently to the burial site. The facts presented below are, then, as reliable as needed for their acceptance by those interested. I consider them worthy the confidence of interested anthropologists.

GRAVES AND BURIALS

The graves occurred in a meandering single row extending for some 1,500 feet along the top ridge of the gravel. The graves were not noted until the black prairie soil was stripped off for a depth of some twelve inches. The light gray gravel came at once to view, and in the gravel eight-foot circles of black earth were exposed at a distance of 15 to 20 feet from

the center of one to the center of its nearest neighbor. When dug out, the black circles proved to be graves. They were about eight feet deep and eight feet in diameter, with parallel, vertical walls. Each grave was completely filled with black earth and not at all with the light colored gravel.

Each grave dug by hand contained from four to eight human skeletons placed in flexed, upright, sitting position, all facing toward the center of the grave. It was the opinion of those at the gravel pit who saw the burials that all burials in each particular grave had been made at the same time. There was no evidence of intrusion.

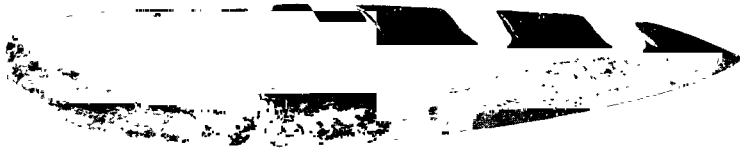
ARTIFACTS

Very few artifacts were recovered. Apparently relatively few had originally been placed with the bodies. All artifacts reported as found are now in my possession, excepting two—a bone knife not fully described to me, and a ball of prepared red ocher. I have, however, only three beads from a necklace of fifty or sixty. The beads illustrated in this article are typical, excepting that one informant says some of the beads possessed surface designs of bird forms. The missing bone knife is also said to have had a design on one side, depicting the head of some large mammal, and, on the other side, of a flying bird. These pictures were drawn by incised lines. The ball of red ocher was seven or eight inches in diameter and appeared to have been prepared and mixed with grease. The artifacts which I have—two harpoons, a tooth-edged knife, a skin-dresser, three beads, and a sandstone “whetstone”—are illustrated and described in detail in the following pages.

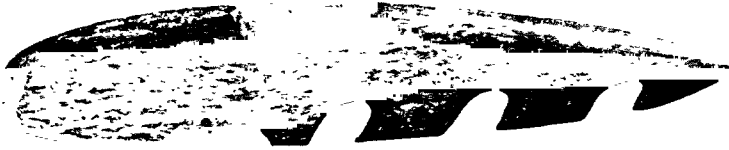
HARPOONS

The two harpoons (pl. 18*a-d*) are reported from the same grave. They have several characteristics in common. They are dark yellow in color, abundantly mottled with irregular darker, rusty blotches. Both are made of the same material. It is a hard compact bone which has not cracked or checked. It is so compact that many persons, including those who have known the pieces since their discovery in 1908, believed them to be of ivory. They are in appearance not unlike fossil walrus-tusk ivory, except that they are more mottled than the used pieces of this ivory with which I am familiar. However, the harpoons are not ivory. They are probably made from leg bones of a large mammal. They are heavy but, I believe, not mineralized, though they have the visible appearance of age and of slight mineralization.

In gross structure both are almost identical. They are convex on one



a



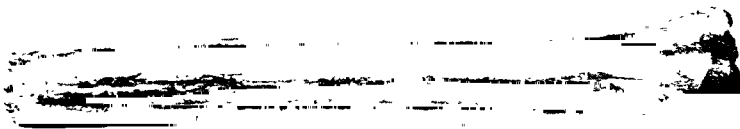
b



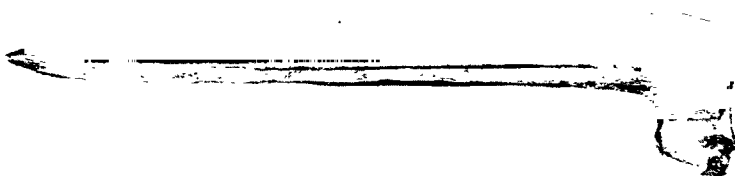
c



d



e



f

a, b, Harpoon A, face and back views, respectively. Ca. $2\frac{1}{3}$ natural size.
c, d, Harpoon B, face and back views, respectively. Ca. $2\frac{1}{3}$ natural size.
e, f, Skin-dresser, front and left side views, respectively. Ca. $2\frac{1}{5}$ natural size.

side for their entire length. We will call this convex side the face. It has the appearance of having been "whittled" with some kind of a knife. Knife marks are plainly visible parallel with the longer axis of the implement. The other side is also convex at the point and for about 25 to 35 mm. below the point. But thereafter it flattens, and still farther below, it becomes slightly concave. The concave area of the back is the interior surface of the shaft of the leg bone. It still shows a cellular bone structure—which has been dressed relatively smooth. The bones from which the harpoons were made were either too thin to allow the production of harpoons with both face and back convex, or else it was the deliberate intention of the maker to have the back concave to assist the flow of blood from a harpoon wound. As has been said, the entire convex face has been whittled—otherwise the harpoons would have been thicker. Probably the original bone was thick enough to allow the production of harpoons as thick as these are with both face and back convex, but the concave back was desired and retained—even being deliberately prepared by the maker of the harpoons.

Harpoon A has three barbs, and harpoon B has four. If there had been no barbs, each harpoon would have been bilaterally very symmetrical. The edges are almost parallel, except where they taper to the point for a distance of 25 to 35 mm. This means that the barbs do not project beyond the original edge of the weapon. Undoubtedly this type of harpoon—with non-projecting barbs—is a primitive type. So far as barbs are concerned, the harpoons are unilateral, with barbs along the left edge as one looks at the convex face of the weapon. Each barb was produced when the workman cut a U-shaped notch into the edge of the weapon, at an angle of about forty-five degrees. Both edges of the harpoons have been so thinned as to produce a good piercing point from the tip of the harpoon back as far as and to cover the first barb. Below the first barb the edges have not been thinned. Neither have the barbs been definitely pointed, though there is a tendency to undercutting of the barbs, especially on the back side of harpoon A (pl. 18*b*) and on the face side of harpoon B (pl. 18*c*). But this undercutting seems to have been intended more for a slight thinning of the weapon on face and back than for a thinning of the under edge of the barb. This technique would allow the barb to sink into the flesh of a speared victim if there was any "drag" on the implanted harpoon. The harpoon thus thinned on face and back would also hold in the flesh more securely than it would if the lower edge of the barb were thinned—because such a thinned barb would tend to cut its way out of the flesh in case of "drag." The notches which form the barbs do not extend halfway across the sides of the harpoon. In fact, they are not cut as far as the crest of the convex

face. It appears that they were thus consciously made, so as not to weaken the weapon more than necessary.

Another feature common to both harpoons is that they are stained dark gray and black over much of the surface near the base. This stain is probably due to blood which settled under leashing which attached the harpoon to a javelin or spear handle. In such a position blood would have remained in contact with the weapon much longer than it would on the exposed forepart of the blade—which is not so stained.

The bone of both harpoons is so compact that, when immersed in water for specific gravity determinations, no water was absorbed by harpoon B. Harpoon A produced only three very tiny bubbles. They arose at once on immersion and, I believe, came from air enmeshed with the thread by which this harpoon was suspended.

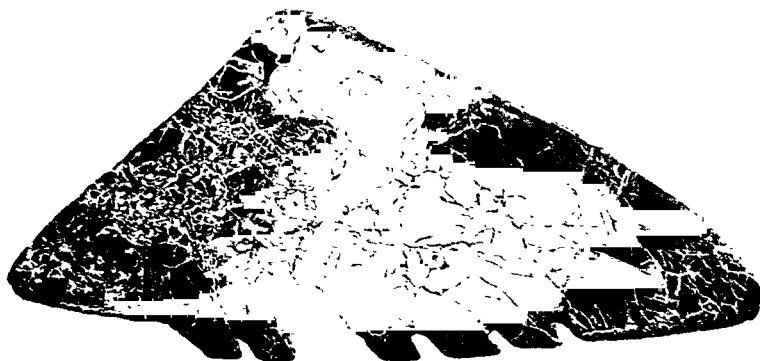
In the grave, both harpoons apparently were in contact with red ocher. The microscope reveals red ocher abundantly clinging to the weapons, and the open bone cells on the back of harpoon B are packed with so much ocher that it is very noticeable at a glance. The back of harpoon B is really red.

Clearly, harpoon A was hafted to a handle. A groove completely encircles the weapon 51 mm. from its base. It would enable secure leashing to a javelin handle.

Though harpoon B has four barbs, I am of the opinion that as the harpoon now is, and as it was last employed, the U-shaped notch under the fourth barb was employed in the process of leashing. This harpoon has no encircling groove, as has A. This harpoon had probably become broken and had then been reshaped as it exists today. Both the face and the back, from the fourth barb to the base, have many fine scratches—a technique of surface finishing found nowhere else on either harpoon. Those scratches (visible in the photographs) appear to have been produced in reshaping the implement near its base after it was broken. Again, there is a small semi-circular notch in the left curved edge midway between the base of the harpoon and the U-shaped notch cut under the fourth barb. As that present semicircular notch originally was, it could have been either a fifth U-shaped notch forming a fifth barb, or perhaps it could have been a circular hole 3.5 mm. in diameter. In case it was a notch producing a barb, the harpoon was probably of the same type as harpoon A, excepting that B had at least five barbs. On the other hand, if there was originally a circular hole, then harpoon B had four barbs and was a retrieving weapon—such as the Eskimo use for sea mammals. Since the semi-circular notch is in the same longitudinal line as are the four U-shaped notches nearer the point of the

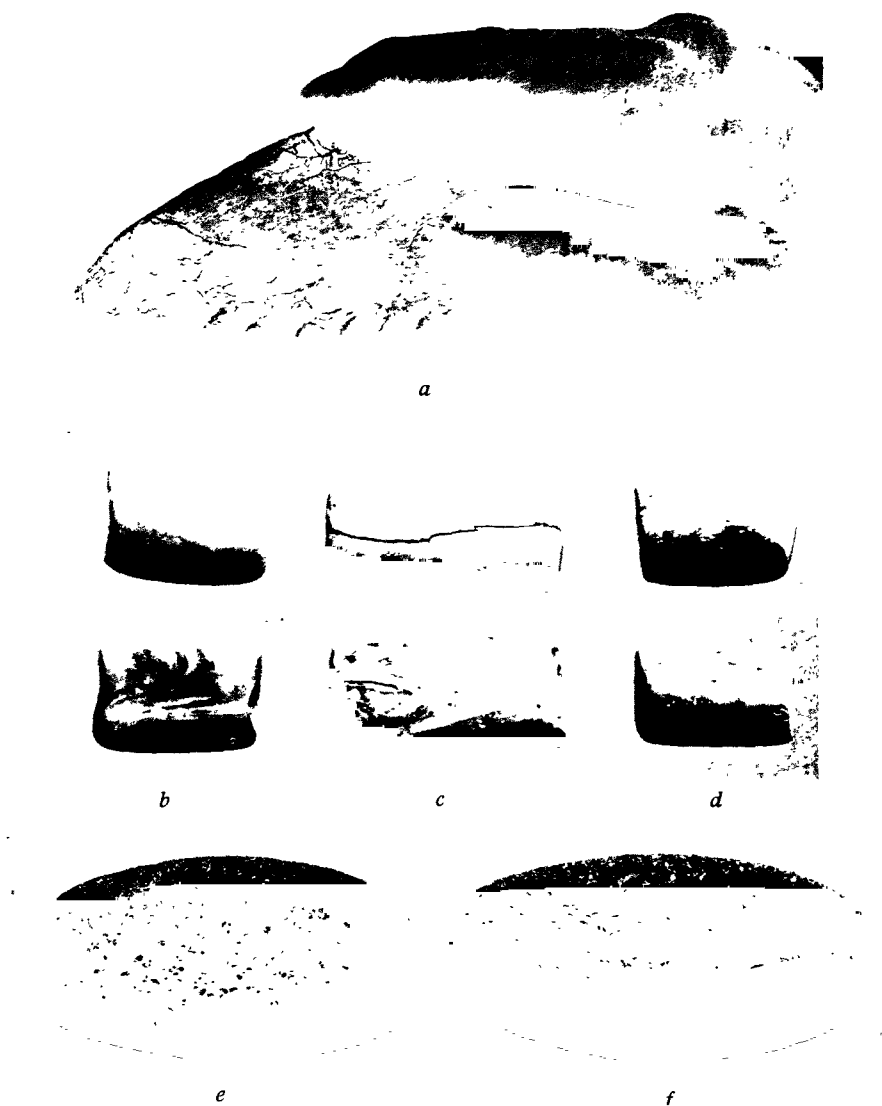


a



b

a, b, Tooth-edged knife, face and back views, respectively. Ca. 4-5 natural size.



a, Tooth-edged knife, showing hand hold. Ca. 1/2 natural size.

b-d, Beads. Opposing surfaces shown in the two rows. Natural size.

e, f, "Whetstone," top and bottom views respectively. Ca. 1/2 natural size.

harpoon, and, also, since it is situated exactly the same distance from the fourth notch (24 mm.) as is the fourth from the third, and the third from the second, I believe it is the remains of a fifth barb-making notch.

No matter what the original type or form of harpoon B, the dark stain on the weapon below the present last barb makes one believe that the harpoon was used last as an effective three-barb weapon hafted to a javelin handle covering the base up to, and over, the fourth U-shaped notch. The face also is worn broadly concave opposite that notch—as if by the end of a handle leashed at that place.

MEASUREMENTS OF HARPOONS

A	
Extreme length	144 mm.
Extreme breadth (across shoulder below third barb)	28 mm.
Extreme thickness (across shoulder below third barb)	11 mm.
Specific gravity	2.109
B	
Extreme length	149 mm.
Extreme breadth (across fourth barb)	23 mm.
Extreme thickness (across fourth barb)	9 mm.
Specific gravity	2.047

TOOTH-EDGED KNIFE

The tooth-edged knife (pl. 19*a, b*) is unique so far as we know. No similar one is known to the following four important museums in America: American Museum of Natural History, New York City; Field Museum of Natural History, Chicago; Museum of Anthropology, University of California, Berkeley; National Museum of Canada, Ottawa. All of these museums possess very considerable collections of artifacts from areas from which one believes the culture of some of the Arvilla implements now in hand probably derived. No references to a similar type of knife have been found in publications at hand. We hope there are other knives of the same type, known to readers of the *American Anthropologist*, which may assist in identification.

Specific Gravity of the Tooth-Edged Knife and of Ivory

1. Tooth-edged knife, Arvilla gravel pit grave	1.94
2. Walrus tusk, Alaskan (worked fossil)	1.92
3. Walrus tusk, Alaskan (worked fossil)	1.94
4. Walrus tusk, Alaskan (worked fossil)	1.95
5. Mammoth tusk, Alaskan (fossil)	1.81

6. Elephant tusk, African ("living")	1.98
7. Whale tooth, Alaskan ("living")	1.98
8. Walrus tooth, Alaskan (worked fossil)	1.98
9. Walrus tooth, Alaskan (worked "living")	1.96
10. Walrus tooth, Alaskan (worked "living")	1.97

Specific gravity determination for the tooth-edged knife clearly classifies that artifact among ivories. The above table shows it is nearer the walrus tusk group of ivory than any other ivories we possessed for the determination.

I have a section of "living" Alaskan walrus tusk from a tusk large enough to allow the knife to have been made from one of its size, and also a completely mineralized Alaskan walrus-tusk ax which had been made from an equally large tusk. The tooth-edged knife is probably fossil ivory; it may be fossil walrus tusk ivory.

In color the implement is a dark, golden yellow, with a suggestion of tan. All three tips or points of the knife are stained, on both surfaces, a grayish color with a faint suggestion of green. Perhaps it is a blood stain.

The knife is slightly convex on its face—the side showing in the photograph of the knife held in the right hand. It is slightly convex on the back. All three edges are thin and will readily cut raw beef. When so employed, the knife must be drawn toward the user. If it is pushed, it clogs in the tissue. It cuts surprisingly well when drawn. Evidently it was made for a flesh-cutting knife.

The two plain edges are beveled for about 5 mm. on both surfaces. The extreme length of the knife is 121 mm. along its convex tooth-edge. The six teeth total 57 mm. of cutting edge. The longer plain cutting edge, which also is convex, is 90 mm. long. The shorter plain cutting edge, which is concave, is 63 mm. The extreme breadth of the knife is 53 mm. The knife is so thin that one would judge it must be fragile. One's first impression is of astonishment that it was found unbroken—even greater astonishment that it has not been broken in the twenty-three years since it was taken from the burial. But it is very strong in spite of its thinness. Head calipers opened the width of 2 mm. allow all six teeth to pass between them. Opened for a distance of 3 mm., the calipers allow the knife to pass between with absolutely no contact of its two surfaces anywhere. At 2.5 mm., however, the knife binds against the calipers in those areas within the grasp of thumb and forefinger (see pl. 20a). This means that the thickest, sturdiest part of the knife is the area of the user's hand-hold.

The knife was dressed, I believe, in the original process of making, by some implement which left twenty-five or thirty long scratches, like shal-

low incisions, on both surfaces. They are mostly parallel with the two longer edges of the knife, though they are rather well spread over face and back. They show very plainly in plate 19*a*. Both surfaces of the knife were later furrowed by growing plant roots or gnawing insects or worms. The many irregular furrows show white in the photographs. They are most abundant on the stained parts of the knife. Perhaps the food element of blood more or less soaked into the surfaces of the implement was sought. Both surfaces of the knife are polished to a shimmering luster—even over the scratches. But the luster is entirely obliterated wherever the furrows exist.

Particles of red ocher cling to the knife and are discovered rather abundantly by use of the binocular microscope. I did not see them with the unaided eye. Again one congratulates oneself on the unexpected and most rare conditions under which all the Arvilla artifacts have been kept by Mr. Kennedy. Ordinarily they would have been washed, scrubbed, scraped—even broken, just to see whether they would break. Instead, they have never even been washed.

SKIN-DRESSER

The skin-dresser (pl. 18*e, f*) is made from the right metatarsal bone of an elk. The metatarsal was not quite so large as the one from which it was identified in an articulated skeleton of a medium-sized bull elk. So our specimen probably is from a cow, since the bone is mature, as of an adult animal.

The tool was carefully and skilfully made. All edges of the blade have been rounded. Those edges which received the brunt of wear from the worker's grasping hand are smooth and shiny from greasy use. The bit, both front and back, is carefully shaped. One may say truthfully that the bit was made and maintained by a real craftsman.

MEASUREMENTS OF SKIN-DRESSER

Extreme length	236 mm.
Breadth of blade at beginning of shaft	36 mm.
Breadth of blade at middle of shaft	28.5 mm.
Breadth of blade at serrated bit	26 mm.
Breadth of articular head of metatarsal	45.5 mm.
Thickness (front to back) of articular head of metatarsal	45.5 mm.
Thickness (front to back) at point where the anterior surface of the shaft was cut away	21.5 mm.
leaving depth of shaft forming blade	21.5 mm.

Thickness of blade at middle of shaft ¹	15 mm.
Thickness of blade at 27 mm. from bit	9 mm.
Specific gravity	2.039

In distinguishing this particular skin-dresser, attention should be called to the fact that while the articulation of the metatarsal has been deliberately retained, no more of the tubular shaft has been retained than was necessary to maintain the articulation. We have both Siouan and Algonquin skin-dressers of elk, and also of moose, which have the articulation, but they all possess the tubular shaft, excepting where cut away a short distance for the bit. We also have from the Chipewayan similar halved shafts but without the articular end.

Specific gravity determination classifies the skin-dresser with the two bone harpoons—as would be expected. However, the bone of which the dresser is made is unlike the other two in its porosity. For more than one minute (or throughout the period of immersion in water) a fine spray of air bubbles arose from the full length of the shaft of this tool.

Red ocher also occurs on the surface of this artifact.

The blade is gradually thinned from its upper end (with a thickness of 21.5 mm.) through its middle (with a thickness of 15 mm.) to the beginning of its bit (with a thickness of 9 mm.). From that place, which is 27 mm. from its tip, the blade is thinned abruptly on its face (which is on the anterior surface of the shaft), until its serrated edge is thinner than 1 mm.

The serrated edge has twelve teeth—all very evenly cut and evenly spaced. Each tooth and each cut is a triangle just less than 2 mm. on each side. The serrated bit is not at a right angle to the sides of the blade. The bit is curved, with its central teeth projecting 6 mm. farther than its sides where the teeth begin.

I believe there was a leash, or hand-strap, extending from near the lower end of the dresser up over the wrist of the worker. There is a worn, uneven broad groove across the back of the blade about 50 mm. from the bit. I can understand it only when I visualize a looped leash playing and wearing there as its tensor varied during the skin-dressing activity of the worker.

Studying this implement carefully in association with the two harpoons and the knife, one is convinced that all four belong to the same intimate culture. The technique of thinning all the artifacts on face and back, wherever teeth and barbs have been made, is uniform and of careful, de-

¹ This thickness would have been considerably greater had not the person who made the skin-dresser reduced the originally prominent outer border of the posterior surface of the shaft. This was done, probably, to afford a more satisfactory handhold when using the tool.

liberate workmanship. That thinning was a definite part of the production of such features of all those implements.

BEADS

There are three shell beads made, it is believed, from the univalve *Busycon perversus*. That shell is found along the coast of the gulf of Mexico and the Atlantic as far north as Maine, at least. It is not reported from the Pacific coast of America. It was extensively used by the Indians for making large shell beads—whose size was limited only by the length and thickness of the columella. Most of the large beads from the *Busycon perversus* were made up to the horizontal limit of the columella, so they are flattened, or oval, instead of cylindrical, in cross-section, in which case they frequently retain the marks of the spiral groove along the flattened side wall. Some specimens also show plainly, under the microscope, a feather-webbing type of foliation.

The three Arvilla beads are typical in that they are somewhat flattened, showing the spiral and also the typical foliation. In plate 20*b-d*, which shows the two opposing sides of all three beads, the view in the lower row illustrates, somewhat, the spirals and foliations.

The beads have been drilled from each end toward the middle, so the drilled hole is of the hour-glass form. It is about 3 mm. in diameter within the bead, but on beads *b* and *d* the hole is now worn to a diameter of 6 or 7 mm. at each end of the beads.

All beads are the color of pale yellow ivory. Plate 20*b*, shown with more detail in the lower row, is beautifully stained with golden tan.

Measurements of Beads

	<i>b</i>	<i>c</i>	<i>d</i>
Extreme length	22.5 mm.	31.5 mm.	21.0 mm.
Extreme breadth	17.0 mm.	16.0 mm.	10.0 mm.
Extreme thickness	6.5 mm.	8.5 mm.	8.5 mm.
Specific gravity	2.88	2.803	2.722

SANDSTONE "WHETSTONE"

This artifact (pl. 20*e, f*) of sandstone has the appearance of being an ordinary arrowshaft dresser. Its face is rather accurately bisected by the familiar longitudinal groove through which shafts were passed in the act of dressing. The groove is of the proper size for such use, being about 2 mm. deep and 7 to 8 mm. wide where its sloping edges merge into the face of the stone.

Mr. Kennedy, who recovered this artifact, called it a "whetstone." He

believed it was used to sharpen the tooth-edged knife, as the knife and this stone were recovered from the same grave. No other artifacts were recovered from that grave.

The knife has the long scratches on its two surfaces which could have been made with some such stone as this one, and it could readily be sharpened along either side of the groove. It is quite probable that this type of sandstone implement had been employed both to make and to sharpen the tooth-edged knife.

In this connection we must recall the scratches near the base of harpoon B which were probably made when the harpoon was finally reshaped—say, after having been broken. Those scratches could have been made by such a sandstone tool as this one.

The artifact is made of coarse arkose sandstone thoroughly cemented by abundant limonite. Practically each grain of quartz is coated with limonite except where it is now worn off. Though the structure is coarse, there is little if any friability, because of the thorough nature of the cementing process. The area showing white along the middle of the back is weathered feldspar. The implement could have been made from either Lakota or Dakota sandstone, both of which are so abundantly exposed in the Black Hills. That field is the nearest to the burial site of any such rock now known.

The measurements of the "whetstone" are as follows: It is 106 mm. long. It is 53 mm. broad across the middle from where it gradually tapers rather symmetrically along both edges to within 3 mm. of the ends—where it is 25 mm. broad. It is 27 mm. thick at the middle, from where it begins to get thinner toward the ends. This thinning is through curves to within 4 mm. from both ends where the stone is 14 mm. thick;—there the curves quickly become vertical ends of the artifact.

FINAL WORD

We must recognize that the graves in the Arvilla gravel pit were dug out by men probably as poorly equipped as any men could have been for the task. Most graves were dug by Italian laborers—who did not possess even the urge of the "pot-hunter." They had no knowledge of what to look for, except as they had in mind types of objects already found. We must believe that they threw out, unseen, artifacts and materials which would have had archaeological value. But in spite of allowing for lost artifacts up to and well beyond the number covered by the law of averages, we must admit that the non-perishable artifacts placed in the graves, where from 400 to 800 human skeletons were reported to have been found, were most distinctly few.

No mention is made of the discovery of other bones in the graves—either those of dogs (as though buried), or of animal bones having had flesh for food. There is no mention of ash or charcoal, or of flint or (except for the “whetstone”) of other stone implements. No lamps, no hammer-stones, no macerators were recovered. We have no object of copper, nor were there bones with copper stain. There was no pottery. Of the few objects recovered from the graves we must also admit that some are extremely rare, and one is unique, so far as now known, within the great land areas of the Western hemisphere.

The facts now known present us a dual problem, namely: When and by whom was the culture of the Arvilla gravel pit produced? There are tentative conclusions which may be presented at this time.

The sandstone implement is perfectly at home where found, and is equally so farther west and northwest to British Columbia. The three beads shown might have come from any place in the United States and southern Canada; one should note that they are known along the Pacific coast, as well as in the areas nearer the waters from which it is believed the original shells came. The skin-dresser suggestively might be early Siouan or Algonquian. The harpoons seem to belong to the vast area north of the United States—even the Eskimo area; they are more reminiscent of British Columbia than of any other area so near the United States. If the lost beads and bone knife had animal designs by means of incised lines, they also would seem to belong farther north, as along the Pacific, than do the three beads and the skin-dresser which I have. Since the tooth-edged knife seems to be fossil ivory, one inquisitively turns to far north coastal areas for probable provenience.

The type of grave is not common. An acquaintance, Mr. R. J. Tibbetts, in southern Minnesota, informs me that he has excavated a few quite similar but somewhat smaller graves, in glacial gravel, which were filled with black earth. But they contained no artifacts in any way suggestive of those from Arvilla, and the burials were not multiple. We also find record of Ojibwa “deep graves,” but no mention is made of any other feature of the distinctive types of Arvilla culture. The multiple burials could have been due to serious mass loss of human life from either war, epidemic, or the social custom of burying other members of the tribe in the chief’s grave. My opinion is that the multiple burials in the Arvilla gravel in a single row of graves (nowhere double) were due to an epidemic, and that all burials were made by persons who knew the location of the graves previously dug.

All in all, one may conclude that the Arvilla Gravel Pit culture belonged to a migrating hunter tribe which in pre-Columbian time brought into the

area of the Red River of the North a culture some of whose characteristics (as preserved in non-perishable finds) were derived mainly from an area considerably farther north, and that said area was probably accessible to Eskimo cultural influence. If the hypothesis of a people migrating far from its ancient home holds, it is also possible that in a strange environment the tribe was wiped out, or its numbers so reduced by an epidemic, that the survivors did not noticeably influence the culture of any of the neighboring tribes—with which there may have been amalgamation. This dual hypothesis answers the natural query as to why so few specimens of a seemingly far-away culture-type are known in the center of the North American continent.²

UNIVERSITY OF MINNESOTA
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² I am under obligation to the following faculty members of the Department of Geology, University of Minnesota, for certain scientific determinations. Drs. F. F. Grout and J. W. Gruner for specific gravities; and Drs. C. R. Stauffer and G. M. Schwartz for identification of the sandstone. All photographs are by Mr. V. P. Hollis of the Photographic Laboratory, University of Minnesota.

UNILATERAL ORGANIZATIONS IN MEXICO¹

By RALPH L. BEALS

THE frequent discussions of Mexican social organization in the past have centered almost entirely about the nature of the calpolli system of the Aztecs. Occasional suggestions of unilaterally organized societies elsewhere have aroused relatively little interest despite the possible light they might shed on the Aztec situation or their perhaps even greater importance in suggesting the type of social organization of pre-Aztec Mexico. For this reason it is proposed to bring together the suggestive data found by the author in over three years of researches in early Spanish sources and in field work among the Mayo of western Mexico, deliberately ignoring, however, the Aztec situation. While perhaps no definitive conclusions are reached, the data may reinforce the conviction held by many that unilateral organizations lie in the background of Mexican culture history even though the proof of the Aztec case may be unsatisfactory.

The data collected deal largely with western and southern Mexico. In the main they are suggestive rather than conclusive. I will begin with Sonora and proceed southward in presenting them, ignoring for the present the Pima-Papago case.

Opata. Bandelier points out a division of pueblos among the Opata as follows:

I also noticed or was led to notice, a division into original clusters, remnants of former tribal leagues, evidenced by associations of certain pueblos against others in the game of ball. Thus Banamiche and Sinoquipe play against Huepaca and Aconchi.²

While Bandelier believes this to be a survival of dialectic and regional differences, it is suggestive of the Southeastern division of towns.

Hernandez quotes Ramon Corral,³ former governor of Sonora, as follows:

On Sundays all the men are assembled to play the Guachicori (a stick race game)

¹ This paper was written while a Fellow in the Biological Sciences of the National Research Council.

² Adolph Bandelier, Final Report of Investigations Among the Indians of the Southwestern United States, Papers of the Archaeological Institute of America, Am. s. 3, vol. 1: 238-239, Cambridge, 1890.

³ Corral's book, *Las razas indigenas del estado de Sonora*, was not available to me but I believe Hernandez has quoted from this work. He also quotes a surprisingly understanding biography of the great Yaqui chieftain, Cajeme.

or the Gomi: for the first the town is divided in wards (*barrios*) of upper and lower, which are the contestants and opponents.⁴

To my mind this is almost conclusive evidence of the former existence of moiety divisions.

Cahita. Information from the Cahita is based partly on field work. During the latter part of my stay among the Mayo in 1931 I secured the following information independently from two quite old men:

In the informants' youth the Mayo lived in *rancherías*. In each *ranchería* were to be found three different surnames. Sometimes there were four or two, but three was the regular number. All the residents of a *ranchería* were considered relatives and marriage was compulsorily exogamous. Marriage could be within the mother's *ranchería* but not with anyone of her family name. Marriage of first or second cousins on either side was forbidden. Descent and residence were paternal. Land was divided each year by the chief among the married men in accordance with the size of their families. This represents conditions after Christianization but before the break-up of the *ejidos* or village common lands under Díaz. How far it represents aboriginal conditions is uncertain, but what information of earlier conditions is available is entirely compatible with this mode of life. Time did not permit checking this information further or investigating the cognate Yaqui. It is hoped to do this soon.⁵

Evidently the Mayo were organized into localized patrilineal sibs or lineages. Further information on the nature of the surnames and whether they occurred in more than one village is desirable.

In the larger towns of the southern Cahita *barrios* occurred in which it sometimes happens that within a *pueblo* those (languages) of the *barrios* may be different,⁶

a situation which might arise by the agglomeration of smaller units. During councils, when a speaker finished, if he was considerably older than his hearers, they said: "You have spoken well, my grandfather." If he was about the same age, they said, "my older brother" or "my younger brother." The speaker concluded with an exhortation to large and small in the village, addressing them by

⁴ Fortunato Hernandez, *Las razas indígenas de Sonora y la guerra del Yaqui*, xi Mexico, 1902.

⁵ Andres Perez de Ribas, *Historia de los trivnphos de nvestra Santa Fee* etc., 330. Madrid, 1645. A suggestion of the Yaqui house group is given by Perez de Ribas when he says a house was struck by lightning and a man's wife, daughter-in-law, and a grandson were killed.

⁶ *Ibid.*, 21.

names of relationship, my grandfathers, my parents, my older brothers, my younger brothers, sons and daughters of my brothers.⁷

This is entirely compatible with the idea of localized kinship groups.

It should be briefly noted in passing that the Cahita formerly played a stick race game resembling closely the Southwestern type. What seems of significance is the statement that whole villages sometimes played against one another.⁸ In view of Southwestern conditions, this may well argue a socio-ceremonial connection.

Acaxee. The Acaxee lived in rancherías "each with his sons, nephews, and kinsfolk" upon whom one relied for redress of injuries.⁹ This would be comparable with the Cahita situation, apparently. The Humes, an Acaxee branch, had nine pueblos, each with four or five rancherías containing six or seven married neighbors (*vecinos casados*).¹⁰

The Acaxee played a ball game of the Mexican type (which was also played by the Cahita). The ball game had very important ceremonial associations and, except for practise games, one pueblo or ranchería played against the other, the circumstances being similar to those for the Cahita stick race game.¹¹

West Central Mexico. In this region from Culiacan to Colima there is only information on barrios. The references to these I have assembled elsewhere. They occurred in at least part of the Cahita territory, province of Culiacan, Tepic, and generally in Jalisco. Eastward they occurred in Michoacan, Mexico, and vicinity, and in Huastec territory. At Cuiseo, Jalisco, one barrio was occupied by bilingual Nahuatl-Tarascan speaking people who did not flee the Guzman expedition, as did the inhabitants of the other barrios of the town.¹² At Cutzalan, Jalisco, each barrio had its own idol,¹³ while at Ameca, Jalisco, separate heads existed for each barrio.¹⁴

Michoacan. The Tarascans of Michoacan seem to have had endogamous marriage within castes or even families, but it is not altogether clear that

⁷ *Ibid.*, 18-19.

⁸ *Ibid.*, 15.

⁹ Javier Alegre Francisco, *Historia de la Compania de Jesus en Nueva Espana*, 1: 396. Mexico, 1841.

¹⁰ *Documentos para la historia de Mexico*, ser. 4, vol. 3: 96. Mexico. 1853-7.

¹¹ For a description see Ralph L. Beals, *The Acaxee of the Mexican Sierra*, in press.

¹² Ralph L. Beals, *The Comparative Ethnology of Northern Mexico before 1750*, *Ibero-Americana* 2: 118-121, 1932.

¹³ Fray Antonio Tello, *Libro Segundo de la Cronica Miscelanea, en que se trata de la Conquista espiritual y temporal de la Santa Provincia de Xalisco en el Nuevo Reina de la Galicia y Nuevo Viscaya*, 142. Guadalajara, 1896.

¹⁴ *Noticias varias de Nueva Galicia*, 260. Guadalajara, 1878.

this was the case among the lower classes. There is a suggestion that the latter practised exogamous marriage within restricted barrios. Among the lower classes, in the case of those who had sex relations before marriage, the girl was taken to the man's house by her relatives and given to him with an explanation of the reasons, providing

he was of a barrio that gave husbands, otherwise they did not give her to him.¹⁵

This could indicate exogamy on a moiety or phratry system as well as endogamy, but it is very slender evidence which perhaps should be disregarded until further data are available. Joyce says marriage was endogamous in castes and barrios, but I do not know his sources.¹⁶ It is strange that in an endogamous society, marriage of mother with son and uncle with niece should be permitted, and marriage of father with daughter and nephew with aunt should be forbidden.¹⁷ While the exact meaning of these terms probably escaped the chronicler, by any reasonable interpretation of them they would be compatible with a paternal sib organization but never with a maternal organization.¹⁸

Colima. The situation is suggestive of localized, exogamous units. Descent is not given but is probably paternal.

They marry and divorce and repudiate upon their whim and call us, the Christians, *papas*, a reverential name among them and which in their tongue signifies father or person to whom they give and owe respect and obedience. Each one is a *papa* in his own affairs and dispensations. Without wishing other authority they take the wives and husbands they wish, marrying mothers and daughters together, brothers-in-law with sisters-in-law, two or three brothers or sisters together, and cousins, holding this manner of contracting their marriages as licit and without horror. They believe it to be an abominable fault without remission for a man or woman of one name to join in any way with a person of the same name and the man or woman who takes this bestial course is held as a common enemy and abhorred and persecuted by all. So greatly are they demented and deceived that they affirm that the names are the certain consanguinity and affinity and this they must observe and fear and not that which truly is.¹⁹

They dwell on the ridges and summits of hills, and on the sides of them, divided and distant one from another but where the place and their whims agree they form

¹⁵ Relacion de los ceremonias, rictos, poblacion y gubernacion de los Indios de Mechoacan, hecha al Ill^{mo} Sr. D. Ant de Mendoza, 47-56. Ed. 2, Morelia, 1903.

¹⁶ Thomas A. Joyce, *Mexican Archeology*, 163. New York, 1914.

¹⁷ Relacion de . . . Mechoacan, 57.

¹⁸ For a further discussion of this problem see Beals, *Comparative Ethnology*, *loc. cit.*

¹⁹ Juan Surez de Cepeda, *Relación de los indios Colimas de la Nueva granada*, 1581. *Anales, Museo Nacional de Arqueologia* 4: 510-511. Mexico, 1912-13.

small barrios of six or seven neighbors in houses close together without observing order.²⁰

They have wars among themselves, surname against surname in the form of bands.²¹

This again is highly suggestive of the localized patrilineal sib-groups found elsewhere.

Southeastern Mexico. The Zapotec, probably the Mixtec, and perhaps the Mixe and Zoe, had sib systems.²² Dr. Radin informs me that the evidence for type of descent is tenuous, but that from the fact that the children of sisters could not marry he would conclude it was maternal.

Lacandone. Descent among the Lacandone is paternal. The principal inheritance is by the eldest son, and partly by the younger sons. If there are no sons, the brothers inherit, never the wife or daughters. Each family bears the name of some animal. Inasmuch as those bearing the same name usually live in the same neighborhood, there is a certain amount of localization. Marriages between individuals bearing the same name are infrequent. There are indications of a more complex organization of these sibs or lines of descent which has pretty well been obliterated.²³

Maya. Landa says:

They are careful to know the origin of their lineages, especially if they come from some house of Mayapan. The names of the fathers remain always with the sons and not with the daughters. They always call their sons and daughters by the name of the father and mother. In this way, the son of Chel and Chan is called Na-Chan-Chel, which is to say the son of such ones, and this is the cause that those of one name are said to be relatives and are treated as such and for this, when one arrives in some place where he is unknown and is in need, he immediately makes known his name and if there is any one of this name he is immediately received and treated with all kindness and thus no man or woman marries with one of the same name because it is for them a great disgrace. The Indians do not permit the daughter to inherit with the sons except by charity . . . the sons divide equally, except to him who most notably has helped gather the estate is given an equivalent return, and if all are daughters, the brothers inherit²⁴. . . . If one married one's brother's wives, it was considered bad. They do not marry with step-mothers, nor their wives' sisters, nor their mothers' sisters, and if someone did so it was considered bad; with

²⁰ *Ibid.*, 511.

²¹ *Ibid.*, 519.

²² Paul Radin, *Mexican Kinship Systems*, UC-PAAE 31: 2.

²³ Alfred M. Tozzer, *A Comparative Study of the Mayas and Lacandonas*, Archaeological Institute of America, Report, 40-41. New York, 1907.

²⁴ Diego de Landa, *Relacion de las cosas de Yucatan*, Brasseur de Bourbourg edition, Spanish text, 134 et seq. Paris, 1864.

all the other relatives on the mother's side they could marry, even though they were first cousins.²⁵

This again only makes sense if we assume a sib system.

Kakchiquel. According to Joyce the Kakchiquel have a sib system similar to the Mexican calpolli but based on relationship rather than locality.²⁶ The sororate and levirate were not permitted nor marriage with the maternal aunt. Residence was matrilocal for five or six years, this being connected with bride service.²⁷ A man became a relative of his wife's clan, but never she of her husband's clan.²⁸ This suggests a maternal system very strongly, but the remainder of the points are so strongly similar to the Yucatan Maya that one is tempted to believe there is an error in the emphasis placed on maternal descent. The kingship among the Kakchiquel descended in the male line.²⁹

Adjoining Areas. In the region north of Mexico, the Pima and Papago had paternal sibs which did not affect marriage. These were divided into two groups, the Vulture or Red People, and the Coyote or White People.³⁰ This color division also existed among moieties in the Southeast.³¹ The association of one moiety with coyote is general in Southern California; the association of the two moieties with up and down as among the Opatas occurs among the Yokuts, Western Mono, and Luiseño.³² Localized male lineages are found generally in southern California except for the Colorado River Yumans and as far north as the Miwok. The Colorado River Yumans have patrilineal clans, and in California the importance of the localized patrilineal lineage is often submerged in the clan and moiety organization.³³ However, Strong points out that the lineage differs from what he calls clans only in the increment of socio-ceremonial functions, there being no real difference in kind involved.³⁴ The Opatas division of upper and lower barrios for playing a ball game assumes particular interest in view of the widespread occurrence of this practise in the eastern United States and the Cahita and Acaxee data cited.

To the south. It is beyond the scope of this paper to attempt to go into

²⁵ *Ibid.*, 40.

²⁶ Joyce, 282.

²⁷ *Ibid.*, 285.

²⁸ *Ibid.*, 286.

²⁹ *Ibid.*, 278.

³⁰ Frank Russell, The Pima, BAE-R 26. 197, 1904-5.

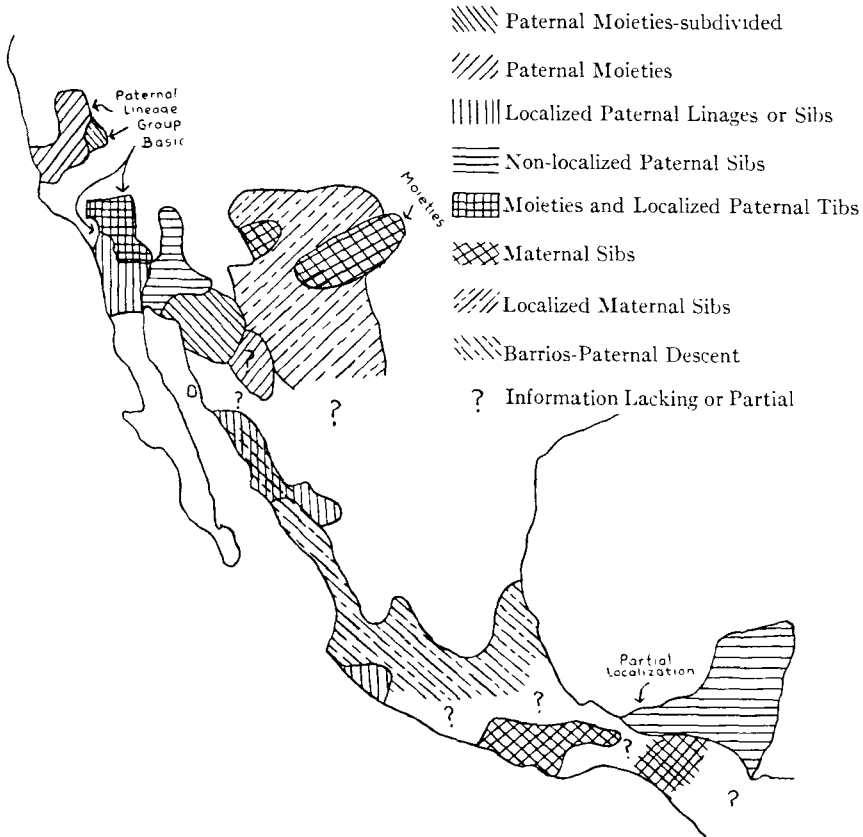
³¹ John R. Swanton, Creek Social Organization, BAE-R 42. 157, 1928.

³² William Duncan Strong, Aboriginal Society in Southern California, UC-PAAE 26: 341.

³³ *Ibid.*, 342.

³⁴ *Ibid.*, 344.

the Central and South American data. Dr. Ronald L. Olson has pointed out, however, a few interesting facts in Peru, particularly the old division into two or four, common to much of the Inca Empire, and particularly the division of the main portion of the capital of Cuzco into two barrios called upper and lower, or right-left, elder-younger, male-female, and which were perhaps exogamous.³⁵ Dr. Olson in 1930 observed modern villages in highland Peru which had moiety organizations with significant reciprocal functions.



Map 1. Unilateral Institutions in Mexico and the Southwest, based on data in this paper; on Edward W. Gifford, *Clans and Moieties in Southern California*, UC-PAAE 14, map facing p. 215, and on William Duncan Strong, *An Analysis of Southwestern Society*, AA 29.17.

³⁵ Most of the data may be found in Phillip Means, *Ancient Civilizations of the Andes*, 207, 208, 219, 306-7, New York, 1931, and Garcilaso de la Vega 1: 67 and 307, Hakluyt edition of 1869.

CONCLUSIONS

The data outlined, despite their meagerness, seem to offer material for the formulation of a working hypothesis. The half-statements of the majority of the Spanish sources perhaps do not give convincing proof of the existence of clans or sibs in Strong's sense of the term, that is, a unilateral organization with socio-ceremonial implications and functions. But they point to the probability of such organizations by the most conservative interpretation, and rather definitely show the existence of patrilineal exogamous lineage groups for much of the west coast of Mexico. These groups, frequently localized, are found from near the United States border to close to the Zapotec-Mixtec area where they come in contact with sib systems of both maternal and paternal type (assuming the unknown Guerrero region to resemble either the Colimans or the Mixtecs). The latter seems to be part of an area of unilateral organization extending as far south as the Kakchiquel. On central America proper we have as yet no data but the South American material is highly suggestive.

The fact that the *barrio* is found in and close to an area of localized patrilineal groups is of some significance. Just what the *barrio* meant to the Spanish in this region it is hard to tell, but as I have pointed out elsewhere, it was obviously a recognizable geographical unit of the *pueblo*, and in the region of larger towns from Jalisco to Culiacan it most probably was simply the tangible expression of the formation of the towns from the joining of localized kin groups which lived formerly in separate villages.³⁶ The *barrios* on the west coast must have had some functional values and, as we have seen in the case cited of Cuiseo, Jalisco, not only did they represent a visually discernible division of the town, but they actually represented a difference of peoples of some sort. Consequently it seems highly probable that they demonstrate what would have occurred had circumstances forced the amalgamation of the exogamous patrilineal lineages of, say, the Mayo into towns, preserving the localization of these units. From its distribution in areas of large towns, it is evident that it was in some way correlated with the agglomeration of peoples into large communities, and that it was also in an area at least in contact with unilaterally organized peoples.

This situation makes the presence of a sib organization among the Aztecs at least more probable, although it naturally does not prove anything. An exhaustive re-analysis of Aztec social organization might, however, reveal features comparable to the data presented in this paper. Or it may be found that the features of Aztec social organization which suggest a sib

³⁶ Beals, *Comparative Ethnology*, *loc. cit.*

system are aberrant elements of no real functional value taken over from an earlier sib-using culture, or which had crept in from the neighboring sib-using peoples.

With respect to the general North American situation, the data suggest that the paternal localized lineage groups of California represent an extension of an area which reaches from near southern Mexico along the coast to the Miwok in central California. It sheds no light on whether the moiety traveled along with the basic patrilineal lineage group, although the suggested moieties of the Opata in particular point to southward connections for the moiety as well. It also somewhat reverses the Southwestern situation and suggests that we must view the matrilineal sib organization there as marginal to a patrilineal area. The data, if accepted, will perhaps also give some additional support to the theory of a single source for North American sib systems as advanced by Dr. Ronald L. Olson.³⁷

The accurate evaluation of the data here presented must be left to those more competent than myself. Nevertheless, I feel that the strong suggestion of linkage with the cultures of southern Mexico is of considerable significance. I have in hand data, which I hope to publish before long, which suggest that influences from the southern part of Mexico have at one time been important on the west coast of Mexico and have probably exerted some influence in parts of the Southwest. These data should strongly reinforce the evidence of the spread of patrilineal institutions along the same route.

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³⁷ Ronald L. Olson, *Unilateral Institutions in North America*, unpublished manuscript.

REPORTS

ARCHAEOLOGICAL FIELD WORK IN NORTH AMERICA DURING 1931

This is the tenth of a series of annual statements covering field activities in North American archaeology assembled by the Committee on State Archaeological Surveys of the Division of Anthropology and Psychology of the National Research Council. It is a compilation of brief reports sent to the Committee for this specific use by the representatives of most of the institutions and organizations supporting such field work on this continent. Its purpose is to record briefly the work done and the results obtained during the past field season. The more complete, technical reports of these activities will be found in the several publication media used by the organizations concerned.

The Committee wishes to record its appreciation of the cooperation which has made this review possible, and requests that any suggestions concerning ways and means of increasing its usefulness be sent to the Chairman.

Alabama. In January, Mr. M. W. Stirling, Chief of the Bureau of American Ethnology, conducted an archaeological reconnaissance in the vicinity of High Point, North Carolina, visited two sites on Pine Island in the Tennessee River in northern Alabama, examined the early historic sites being investigated by the Alabama Anthropological Society near Montgomery, and visited a large mound at Flomaton, Alabama.

H. W. Dorsey,

Chief Clerk, Smithsonian Institution

In January, 1931, the Alabama Museum of Natural History resumed, for about two weeks, its excavations at Moundville. Five areas in the vicinity of Mounds "R" and "M" were examined. One hundred and five burials were encountered, yielding 289 artifacts, including 72 earthenware vessels, one unusual fish-hook made of copper, and several fine pendants and stone tools. An exceptionally large ratio of animal effigies was recovered.

In August, an expedition of five members of the Museum staff with ten diggers worked in two sites. In a cave on Little Bear Creek, Colbert county, some 20 badly disturbed skeletons were encountered. Although no artifacts were found with the burials, several objects, including a bone fish-hook, a clay pipe, a bowl decorated with elementary handles and notched lip, and tools of stone and flint were removed from the deposits. This cave gives promise of interesting future finds if permission can be secured to continue the examination. Excavations in the Reeder mound at the mouth of Mulberry creek on the Tennessee river in Colbert county yielded 13 skeletons, mostly infants. There appeared to be evidence of aboriginal disturbance. No artifacts were found in association with the burials, with the exception of 11 finely polished, perforated bear canines found at the chest of an infant. One stone axe was recovered. The soil in the mound was generously interspersed with mussel

shells from the surface to a depth of four feet, and large quantities of kitchen-midden material were found in and around the mound.

On July 1, 1931, a systematic archaeological survey of the state was begun by the Museum staff. No site is listed until actually located and inspected by the Museum party, which tends to eliminate errors in duplication, and to prevent a site from being improperly classified, as the result of recording rumors only. The survey is only partially completed, 30 of the 67 counties having been visited. The resulting information will enable the Museum to show, on a 1: 500,000 scale map, all the sites within the state, and to card-index the information, making it readily accessible to interested parties.

W. B. Jones,

Alabama Museum of Natural History

The work of the Alabama Anthropological Society was confined, in 1931, to the valleys of the Coosa, the Tallapoosa and the upper Alabama rivers. Nearly 100 burials were found at a site which has a known history from September 1540, the date of DeSoto's visit, to 1814, when a town of 200 houses was burned by General John Coffee, of Andrew Jackson's army. These burials were under the house-sites, opposite the fire hearth, and are in groups 20 long paces apart. In the majority of cases, shell, earthenware, and stone objects are associated with European trade material. A number of very fine clay pipes, showing no European influence, have been taken out. The burials are nearly always in groups of threes and fives, suggesting a family. A number of burials are of children. At Huith-le-walli (sometimes Ullibahali) of the Spanish narratives, the houses were 19 paces apart, and at a nearby site 27 paces apart. At the latter site, James White, Jr. recently took from under a hearth an earthenware tray of superior grade filled with fully three pecks of charred food, consisting of corn on the cob, loose grains of corn, acorns, beans, and what resembles peanuts. At the mouth of the Coosa, a new section of the cemetery disclosed some fine specimens of urn-burials. Except in rare cases, no artifacts were in the urns, but frequently shell and stone implements were placed at their sides. Near the periphery of the cemetery, a 12 inch vessel was found containing the remains of a child and a short string of glass beads. Except for a silver piece found on a previous occasion, this is the first occurrence in our records of trade objects associated with urn burials. This site is adjacent to the old French post established in 1714, and these trade materials may indicate a later intrusive deposit. As before, no stratified deposits were found. In Alabama, the habitation and burial sites are adjacent, rather than superimposed. Evidences of as many as three periods of occupation may frequently occur in burials within a relatively small area.

Peter A. Brannon,

Alabama Anthropological Society

Alaska Dr. Hrdlicka continued, under the auspices of the Smithsonian Institution and the National Museum, his anthropological researches in Alaska. The explorations of 1931 were devoted to Nushagak, Molchatna and Woods rivers, the

proximal parts of the Alaskan peninsula, Iliamna lake, and Kodiak island. They resulted in anthropometric data on the surviving full-bloods of those regions, location of many old sites with excavations in the most important, and the gathering of over 100 boxes of important anthropological and archaeological materials. The work, while very difficult owing to frozen ground, inclement weather, and dearth of help and transportation, proved exceptionally remunerative, and revealed, on Kodiak island, a wholly new and highly promising field for American archaeology.

Messrs. James A. Ford and Moreau B. Chambers were detailed by the Smithsonian Institution to carry on archaeological investigations in Alaska during the past summer. Mr. Chambers excavated for three months at Gambell, St. Lawrence island, where during the summer of 1930, Mr. Henry B. Collins, Jr. had found an unbroken sequence of Eskimo culture extending from an early phase of the Old Bering Sea culture to the present time. Mr. Chambers' work added to the completeness of this chronological record, especially in bringing further evidence of the transitional phase between the Old Bering Sea and the Punuk periods.

Mr. Ford proceeded to Point Barrow, but as the result of the worst ice conditions in the Arctic for many years, he did not arrive until late August when the ground was beginning to freeze. Consequently he wired for and received permission to stay at Barrow over the winter, so as to get in a full season of excavation in 1932. Barrow seems the most promising locality at which to find dependable evidence of the relationship between the Old Bering Sea culture and the Thule, the dominant prehistoric Eskimo culture of the eastern regions.

Walter Hough,
U. S. National Museum

The researches under the auspices of the Museum of the University of Pennsylvania by Miss Frederica de Laguna, assisted by Mr. Wallace de Laguna and Mr. Edwin B. Newman, centered in Kachemak Bay, on the southern coast of Cook inlet, where several shell-heaps and village sites were excavated. Some of these appear to be of considerable age, since deposits were found to a maximum depth of 14 feet, and the oldest site investigated is now entirely below the level of high tide. These excavations indicated that the culture of the ancient population was Eskimo, although the region is now inhabited by the Kenai Indians, an Athabaskan group which has pushed down to the coast from the interior in relatively recent years. Stratigraphical results indicate that four stages of this Eskimo culture may be distinguished. It was apparently most similar to the cultures of the present Eskimo of Kodiak island, Prince William sound and the southern coast of Kenai peninsula. Probably the most interesting object found was a well-shaped stone lamp with V-shaped grooves on the bottom, apparently belonging to the culture which produced the remarkable stone lamps with figures in the bowl, the origin of which has been in dispute. Many specimens of ancient Eskimo types were recovered, including harpoon heads of obsolete types, including the so-called Thule and Birnirk, but probably the most characteristic and numerous objects were grooved or notched stones presumably used as bolas. Several burials were found, the remains of which have not

yet been studied. A few were buried in flexed position, but most of the interments were secondary burials, the bones having been buried in holes after the flesh had been allowed to decay by exposure.

J. Alden Mason,

Museum of the University of Pennsylvania

Arizona. Dr. Frank H. H. Roberts, Jr. spent the field season from May to September conducting a series of excavations at an archaeological site three and a half miles south of Allantown, in eastern Arizona, under the auspices of the Bureau of American Ethnology. The site is one which will prove of considerable importance in the study of Southwestern archaeology, because four distinct horizons are represented. The earliest remains are those belonging to Basket Maker III. Subsequent horizons are Pueblo I, II, and III. Valuable information on the sequence of pottery types was obtained through stratigraphic studies made in refuse mounds. Fourteen pit houses belonging to Basket Maker III and Pueblo I were excavated. In addition to information concerning the type of house and the sequence of pottery types, as well as data concerning the method of disposing of the dead, valuable specimens were recovered. One of the pit houses was restored, in order that visitors to the site may observe domiciles of this variety. Shed roofs were erected over the remaining pits of two other structures, so that they will be preserved for students and other interested parties. During nine weeks in July and August, the Bureau expedition was augmented by four graduate students holding scholarships in archaeological field method from the Laboratory of Anthropology at Santa Fe, New Mexico. The Laboratory cooperated with the Bureau in the investigations made during that period. Further work will be done at this site during the next field season.

Mr. Neil M. Judd, Curator of the Division of Archaeology, U. S. National Museum, was detailed to the Bureau for the purpose of conducting an archaeological reconnaissance in the Apache country of southeastern Arizona. Mr. Judd devoted most of his limited time to a superficial examination of caves containing small rude dwellings, situated along the western base of the Natanes (Nantac) plateau. Potsherds associated with these dwellings correspond to those from ruins in the Showlow-Pinedale district—ruins recently dated by the Douglass tree-ring method, as of the late 13th century. The same caves had served as shelters for Apache Indians, probably during the troublesome period of 1871–1886, since a number of old Apache baskets and other objects were cached in them.

H. W. Dorsey,

Chief Clerk, Smithsonian Institution

From February to June, the Arizona State Museum continued the excavations at the Martinez hill ruin, a short distance from the old San Xavier Mission. This prehistoric site belongs to the Late Pueblo period and presents excellent types of red-on-buff pottery. The walls are extensive and massive, corresponding to the Casa Grande type. We have not yet determined whether or not the village was made up of a series of compounds, but it seems very likely.

From July 20th to September 1st, a Museum expedition began the excavation of a large pueblo on the Fort Apache Reservation known to the Indians as Kinsleba or "Brown House." It will require two or three seasons to study thoroughly this extensive ruin, which should reveal data regarding the life of the people of the Upper Salt River region. The Museum, during the year, has received a small collection of pottery and stone implements of the Elden Pueblo from the U. S. National Museum, and some excellent potsherds from eastern Arizona from the Gila Pueblo in Globe. The Los Angeles Museum has presented a model of the ancient pueblo uncovered by the Van Bergen Expedition near Casa Grande, and a representative collection of early red-on-buff pottery from the same locality.

Byron Cummings,
Arizona State Museum

Owing to climatic conditions which allow excavation throughout the year, the Department of Archaeology of the University of Arizona permits advanced students to do field laboratory work in nearby sites in cooperation with the expeditions of the Arizona State Museum. In the spring such laboratory work was done at the Martinez hill ruin south of Tucson. Since the opening of the University in September, the Department has cooperated with the Museum in excavating at the University ruin about eight miles northeast of Tucson. This is a large pueblo ruin of a type similar to that of the Martinez hill ruin. During the holiday seasons, the students have done reconnaissance work in the Chiriqua and the Sierra Ancha mountains, thereby gaining a wider acquaintance with the different types of ruins found in our South-western field.

Byron Cummings,
University of Arizona

Excavations of Pueblo Grande ruins by the Phoenix Archaeological Commission continued from January to June. Though comparatively little work has been done on the mound so far, evidence obtained from the excavated portion points definitely to a complete evacuation of the lower levels with a subsequent re-occupation of a higher level on top of fill ten feet deep in some places. No furniture has been found below the new top level and the fill, often brought from trash mounds, contains sherds of identical types from bottom to top. Test holes below the bottom level show another level of occupation another ten feet down, but so far no difference in types of artifacts from those above. The theory that waterlogging of the surrounding land caused the lower level to become unfit for any use for which the building was intended has received support through a study of the prehistoric irrigation in this valley.

The balance of the year was devoted to the study of the local culture material, with occasional field trips in the local region. In August, a trip was made to the Prescott region where the local pottery meets that of the mountains of the Bill Williams country, and in December a brief survey was made of some ruins in the Superstition mountains. The Prescott region shows a culture which is more unlike

than similar to the local irrigation culture, but the Superstition mountains survey produced evidence of check dams for water preservation and examples of all the minor antiquities found in the valleys of the Salt and Gila rivers.

Odd S. Halseth,

Phoenix Archaeological Commission

The first four months of 1931 were devoted by the field staff of Gila Pueblo to the excavation of a Hohokam village of the Colonial period in Roosevelt lake. Complete data showing the construction of Hohokam pit houses was obtained and a definite chronological position defined through cross-dating with northern sherds. A report on this operation has been distributed.

During May we carried our ceramic survey to the southeast and covered the general area between Safford and the Chiricahuas, running into a complex of red-on-buff wares which has added breadth and depth to the existing problem. In June a base camp was established at White river, Arizona, which yielded us 100 sites. July was spent around Showlow, where another 100 sites were brought in. The survey was then continued in New Mexico and Texas. The season's work to date has resulted in our adding nearly 800 sites to our sherd collections. The sherds have been washed and mounted as described in "The Use of Potsherds in an Archaeological Survey," *The Medallion*, 1928, and the boards are now being studied.

During the year we have received important additions to the pottery collections: from the Los Angeles Museum, a representative collection of red-on-buff pottery from the Grewe site near Casa Grande, excavated by the Van Bergen-Los Angeles Museum Expedition, 1929; from Carnegie Institution, a collection of Classic Mesa Verde pottery excavated by Earl Morris in the La Plata drainage. We have also effected an exchange of material with the University of Utah by which we have acquired a representative series of Mesa Verde pottery from the vicinity of Blanding, Utah.

Excavation at Gila Pueblo has progressed slowly. Two cemeteries have been discovered, one to the east and one to the west of the Pueblo, yielding the best examples of Gila polychrome ware that we have seen. Five additional rooms have been uncovered, the walls sheathed with a film of cement and a waterproof roof erected to preserve them. Pottery, stone work, and burials have been cleaned, mended, and replaced *in situ*.

Harold S. Gladwin,

Gila Pueblo, Globe, Arizona

The Museum of Northern Arizona continued the projects begun several years ago: (1) to extend the Archaeological Survey in every direction from Flagstaff as a center; (2) to secure datable beam material from ruins covered by volcanic ash from the last eruption of Sunset crater, thus approximating the date of the eruption; (3) to secure datable beam material to extend the Douglass tree-ring chronology further back into the past; (4) to continue the study of Pueblo II in this region; and (5) to trace the evolution of Pueblo II into Pueblo III.

Dr. Colton and Miss Katharine Bartlett continued the Archaeological Survey, adding 250 new sites. As no adequate maps existed of the Little Colorado Valley, some time was spent on a plane table survey of approximately 300 square miles. On all previous maps the drainage systems, so important in an archaeological survey, are incorrect.

On May 1st, Mr. Lyndon L. Hargrave led a party into the field and established a permanent camp in Medicine valley as a good central point. Equipment and personnel were increased over 1930. (1) Five pre-eruptive sites of Pueblo I and II were completely or partly excavated, but no datable charcoal was recovered. (2) Sixteen post-eruptive pit houses of Pueblo II were completely or partly excavated. (3) Two pueblos of the transition between Pueblo II and Pueblo III were excavated. Ideal stratigraphic relations were discovered. The expedition closed its field work on October 1st.

The results of and the conclusions from the summer's work are as follows: (1) Sites of late Pueblo II and Pueblo III are most abundant in the area covered by the ash fall of Sunset crater. (2) As no datable timber was recovered from the pre-eruptive sites, the exact date of the Sunset crater eruption is still in question. (3) The excavations proved that the vestibule of the "vestibule house," an earth lodge, was never an entrance way, but either a storage room or a combined storage room and ventilator. Entrance was through the roof. (4) Further light was cast on the evolution of the pit house and granary into the kiva and pueblo. (5) Large "bowls" associated with some sites are apparently reservoirs for impounding rain water. Many artifacts were recovered belonging to Pueblo II or early Pueblo III. Although complete pottery specimens were found, the number of stone and bone implements was vastly more numerous. The cataloguing is not yet complete, but some 500 or more specimens were gathered. Besides the artifacts, about 700 specimens of charcoal are being catalogued and studied. From this beam material, eleven Pueblo II pit houses have been dated. Construction dates range from 880 to 969 A.D. These are the earliest sites in the United States that have been assigned dates in our calendar. In June, Mr. John C. McGregor joined the staff and has been working on the charcoal. The Douglass absolute chronology has been carried back a few years, and a new relative series of 250 years established which, at present, does not tie into the absolute series. The material has also been checked by Dr. Douglass.

Harold S. Colton,
Museum of Northern Arizona

The field work of Carnegie Institution of Washington, from July to October, in the Southwest was confined to an area about five miles square, at the extreme western edge of the Red Rock district of northeastern Arizona. The principal site explored was Broken Flute cave, situated at the head of a north branch of Atahonez canyon. This shelter is horseshoe-shaped with open side to the south, approximately 800 feet long and 60 in greatest breadth. Toward one end of the cave, there was originally a deep pocket of considerable extent. Charcoal in lumps of appreciable size is so prevalent down to the very lowest strata, at a depth of 13 feet, which

fill this pocket, that it seems unquestionable that the carbon resulted from fires made by man. Since the entire mass had been wet time after time, thereby decaying such perishable objects as might have been present, and since the components in imperishable media of Southwestern material culture prior to the advent of pottery are very few in quantity, the absence of flint and bone in the few cubic yards of the charcoal impregnated strata which were worked over by no means disproves the presence of man during the period of deposition. These strata, lying entirely beneath the Basket Maker III level of occupation, would seem to offer the possibility of proving human frequentation of the region in times ancient enough to be measured by thousands rather than hundreds of years. With the exception of one cross-section trench, the beds were left undisturbed with the hope that at some future time they would be adequately dissected. Aside from this deposit and minor areas which have been wet, or are deeply covered with rock fall, the entire cave was excavated, mapped in detail, and thoroughly photographed. The structures cleared comprise 15 large chambers and 65 storage cists. In many of the enclosures of both types, and over all areas which they did not occupy, there was a blanket of refuse from a few inches to several feet in thickness. This largest of all the dry shelters in the region yielded prolifically, both of information and specimens. In addition to Broken Flute cave, 16 smaller ones, distributed along Atahonez canyon and Black Horse creek, were excavated wholly or in part, as the nature of their contents dictated. Some digging also was done in the small open sites which are numerous on the ridges and knolls which fringe the narrow valleys composing the terrain. Aside from notes, maps, and photographs, there were gathered some 2000 objects, constituting 1421 catalogue entries. The most striking of the specimens are six long braided sashes of animal hair, two white, two black and white, and two brown. The white wool has been identified as dog hair, but the black and brown have not been positively accounted for. Less beautiful, but fully as important as the sashes, is a series of unfired clay vessels in a variety of shapes and sizes. Only fragments of such containers have been previously exhumed. Other outstanding features of the collection are two wooden flutes decorated with feathers, and several caches of beads and ornaments.

The season's activities reveal that the Red Rock valley was inhabited from beginning to end of aboriginal occupation of the San Juan area, of which the valley is a part. Culturally speaking, this is from Basket Maker II to the end of Pueblo III. The caves, however, were for the most part avoided by the later peoples. The sparse inhabitants of the Basket Maker II period left some evidence of their presence in the dry shelters. Throughout the next culture period, namely Basket Maker III, the caves fairly teemed with population, and there was left in them a full representation of the material arts of the age. The light that it has thrown upon this very important stage in the development of Southwestern culture is the chief contribution resulting from the field work of 1931, for it will enable not only a thorough description of Basket Maker III culture, but will also make possible the identification of specimens of Basket Maker III age present in the large mixed collections from other localities. Owing to the dryness of the caves, most of the timber used in house construction was excellently preserved, whether in natural condition or carbonized by

conflagration. In consequence, more than 300 sections of the varieties of wood suitable for the purpose were sent to Dr. A. E. Douglass for study in connection with his tree-ring dating of Southwestern ruins. There is no doubt that this large series, together with material of similar age already in his hands from other localities, will establish a definite time count spanning the entire length of the Basket Maker III period. While this will not connect with the nether limit of Dr. Douglass' present historic series which reaches back to 740 A.D. further excavation will eventually provide timbers to bridge the gap, thus extending the positive year for year chronology for the aboriginal cultures of the northern Southwest very near to, if not beyond, the beginning of the Christian era.

Earl H. Morris,

Carnegie Institution of Washington

During the early part of 1931, the Los Angeles Museum completed work on the Grewe site, Gila valley, Arizona, and a résumé of that excavation has been published as Occasional Paper No. 1 of the Los Angeles Museum. An archaeological survey was then conducted in the region of Black mountain, thence northeast to Oracle and down to the San Pedro river to determine if there were sites similar to the Grew site in other portions of the Gila. This resulted in the discovery of a number of these early type sites whose pottery, houses, and artifacts corresponded generally to those found at the Grewe site.

During the summer months, an archaeological survey was made of the area between the Black and White rivers on the Fort Apache and San Carlos Indian Reservations, for the purpose of ascertaining if, and to what extent, that region had been penetrated by the Hohokam, and also to plot and record the type sites and pottery of the region. All notes and shard collections have not yet been tabulated, but nearly 200 sites ranging from the single unit, stone outline types to extensive pueblo ruins and small cliff dwellings, were located and tagged. Special brass tags bearing a number and the initials "VBLAM" (Van Bergen-Los Angeles Museum) attached to aluminum pegs were left on each of the sites. No excavation was done, but it is well to note that this region, archaeologically unknown, will richly repay future detailed examination. A number of shallow agricultural terraces were found in the rocky arroyos on the north side of Ash flats, San Carlos Reservation. Fourteen were counted in one arroyo. These were constructed of stones set on edge with earth banked behind them, and were from 10 to 100 feet long and from 9 to 14 feet wide. Apparently the small single unit cliff-dwellings high on the western walls of the sandstone cliffs bordering the northern edge of Ash flats had been the habitations of the people who built and used these terraces. Ash flats is a semi-desert valley, with springs along the foothills. The pottery fragments found in some of the cliff dwellings seemed to indicate that these same people were also responsible for the extensive pueblos found on the highlands further north in the vicinity of Circle prairie. This work was undertaken by Ben Wetherill, Dr. Van Bergen, and Arthur Woodward. Milton Snow accompanied the party as field photographer.

In the fall, the party returned to the Gila to make test excavations on a site

near the east base of Gila butte, on the Pima Indian Reservation, north bank of the Gila river, 10 miles south of Chandler. A series of trenches and test pits revealed that the site, as far as pottery and artifacts were concerned, was of the same period as the Grewe site. The pottery included flare-rimmed bowls, large jars, portions of legged vessels, and figurines. Paint palettes and arrowheads also corresponded to those of the Grewe site. A cremation area was uncovered which contained about 24 cremation pit burials, as well as pits which had apparently been used in the actual cremation of the bodies. The work in the Gila closed in December.

Arthur Woodward,
The Los Angeles Museum

Excavations were conducted by the University of Colorado at Solomonsville, Arizona, from November 20th to December 31st, 1931. Several small buildings were cleared, mapped and photographed, and from them a representative series of pottery vessels, stone, bone, and other artifacts were recovered. Most of the pottery belongs to the Middle Gila complex. However, in the lower levels of refuse found for the most part underneath the later dwellings, there were fragments of Mimbres ware, and some from Casas Grandes, from the Little Colorado, and from the San Francisco river region.

Earl H. Morris,
Carnegie Institution of Washington
University of Colorado Museum

Arkansas. During June and July, Mr. Winslow M. Walker, of the Bureau of American Ethnology, conducted a reconnaissance in the vicinity of Bilbert, Arkansas, in the Ozark mountains. During the progress of this work, he explored 16 caves, the most important of which was located at Cedar Grove. The excavation of this cavern yielded a large number of stone, flint, and bone artifacts, and several skeletons, one of which had an interesting deformation of the skull.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

The University of Arkansas Museum continued its explorations along the headwaters of the White and Buffalo rivers during the summer of 1931. The earliest cultures located are clearly those described by Harrington as Ozark Bluff Dwellers. The vegetal materials especially indicate a close similarity to those of the Basket Maker culture of the arid Southwest. These cultures were succeeded by peoples apparently possessing a Great Plains culture, who used bows and arrows, crude pottery, and stone mauls of the type found on the plains of Texas, Oklahoma, and Kansas. The field party also measured and photographed the remaining known pictographs and petroglyphs of the Ozarks. During February and March of 1931, sites were excavated in Mississippi and Crittenden counties. These yielded artifacts bearing representations of human beings, woodpeckers, and plumed serpents, as well as many "stairstep" designs that strongly suggest the culture found at Moundville in Ala-

bama. Some of the serpent designs would seem to suggest a possible influence wielded on this area by peoples of Mexico.

S. C. Dellinger,
University of Arkansas

With a crew of 17 men, the staff of the Alabama Museum of Natural History began excavations in the area of the Walnut mounds on Little river, near Manila, Arkansas, in August. One hundred and three burials, with which were associated 462 artifacts, were found during the two weeks' work. Of the artifacts, 208 were earthenware vessels, including 34 colored and many effigy vessels. Many interesting objects in flint and stone were also encountered. Nineteen finely-shaped arrow points of the willow-leaf type in groups of five, six, and eight, were found with three burials. Probably the outstanding object discovered was a human effigy of clay, representing the male in a sitting posture with hands folded over the knees, which are drawn back nearly to the abdomen. The ears contained four perforations, and the entire face was embellished with deeply incised decorative lines resembling the deepened wrinkles of an aged person. Both feet were apparently broken before interment. The figure was lightly coated with red pigment.

Walter B. Jones,
Alabama Museum of Natural History

California. Mr. Richard Van Valkenburgh, of the Los Angeles Museum, carried on excavations during the fall at the site of a Chumash fishing village near Redondo beach. A number of artifacts and several burials were found in the camp debris, which revealed materials demonstrating a sea food economy. Interesting data were secured concerning the details of fishing equipment.

Arthur Woodward,
The Los Angeles Museum

Owing to reduced finances, the San Diego Museum was unable to undertake major archaeological field work during the calendar year 1931. We were able, however, to devote one month's time to our archaeological survey of southern California, which has been under way for several years, and is now well on the way toward completion. As a result of this intensive and widespread survey, many problems have been elucidated. Certain culture boundaries and their geographical relations at different periods have been established, as well as directional culture diffusion. It was found that pottery-making was first introduced into California in the southeast corner of the state, and that it spread north up the Colorado river and west to the shores of the great prehistoric Blake sea, which once covered much of the Colorado desert. The association of intrusive sherds from the early Gila river cultures with this local culture indicates contemporaneity. Our researches, however, have suggested the possibility of an equally early or even earlier introduction of pottery in northern San Bernardino county, where Pueblo type sherds occur over a considerable area. Whether this pottery was made in California by colonists or was

brought in from the nearby Nevada Pueblo area is as yet a problem. Our survey has also disclosed a widespread pre-pottery horizon of a crude stone-flaking culture, a report of which is soon to be published.

Malcolm J. Rogers,
The San Diego Museum

Work of the desert branch of the Southwest Museum, situated at Twenty Nine Palms, California, consisted mainly of reconnaissance in San Bernardino and Riverside counties. Many caves and village sites were discovered and recorded, and a number of specimens collected, consisting mainly of pottery vessels, basketry and other textiles, together with implements of stone, wood, bone, horn and antler. A preliminary report of this work has been published. The reconnaissance was in charge of Mr. and Mrs. W. H. Campbell of Twenty Nine Palms, assisted by Mr. Edwin F. Walker, the curator of the desert branch.

M. R. Harrington,
The Southwest Museum

Colorado. The Department of Anthropology of the University of Denver devoted three weeks during the summer to supplementing the archaeological survey of the previous season. Work was concentrated in two areas: the Upper Arkansas valley from Canyon City to Fowler, and the northeastern part of Colorado, with a view to establishing close contact with the Wyoming field and western Nebraska.

E. B. Renaud,
University of Denver

From June to October, 1931, Dr. Paul S. Martin, Assistant Curator of North American Archaeology, spent a second season excavating in the Lowry ruin, in southwestern Colorado, under the auspices of the Field Museum of Natural History. The most interesting single fact ascertained this season was that the culture of the Lowry ruin is an offshoot of the Chaco canyon culture, the locale of which is nearly 300 miles to the southeast. This is indicated by the architectural plan, the construction methods, and the type of pottery. There are five separate building periods, and probably seven occupations, culminating in a terraced pueblo. The Chaco people were ultimately driven out, and replaced by Mesa Verde people, who made certain changes and additions. A cache of 17 pieces of pottery, most of them complete, was found in a small passageway. An interesting feature was the mural decorations on the kiva walls representing symbolical ideas. A spring was found which had been timbered and cribbed with cedar logs in prehistoric times. It seems to have served as a sanctuary, for in the water at the bottom were found offerings of 10 pieces of pottery and more than 40 modern prayer-sticks very similar to those used at present by the Hopi. The cemeteries have not been discovered as yet. As a result of this expedition, which was financed from funds provided by Julius Rosenwald and the late Augusta N. Rosenwald, 70 pieces of pottery, 400 potsherds,

bone tools, fragments of prayer sticks, and the necessary accompanying data were secured.

A. C. Simms,
Field Museum of Natural History

Connecticut. An archaeological survey of Connecticut is being pushed forward by the Department of Anthropology in the Peabody Museum of Yale University. Excavations were started in the autumn of 1931 by the departmental staff with the assistance of students taking archaeological courses. The first site studied was a cave shelter near North Branford. The material remains, found for the most part by screening, were such as might be expected. There was only one refuse layer which designated a short period or periods of occupation during early historic times. It is hoped that by stressing method, factual data may be acquired in an area where the remains of material culture are notably poor.

C. B. Osgood,
Peabody Museum, Yale University

Florida. Early in 1931, Mr. M. W. Stirling, Chief of the Bureau of American Ethnology, visited archaeological sites at Crystal river, Safety harbor, and Alligator creek. During February, he conducted a series of excavations on Blue Hill island, south of Key Marco. A large sand burial mound was excavated, and found to be of early post-Columbian Calusa origin. A number of unusual features were revealed. A clay floor, which gave evidence of having been the base of a temple structure, was found six feet above the bottom of the mound. This structure had subsequently been destroyed, and the mound enlarged by the addition of six feet more of sand. Numerous burials were encountered above and below the clay floor. Articles of European manufacture appeared in the upper level, but were absent from the lower horizon, suggesting that the older level antedates the historic period. Later, after a trip to Haiti to visit archaeological sites worked by Mr. H. W. Krieger, of the U. S. National Museum, Mr. Stirling continued his investigations in the eastern part of the state, and discovered an interesting series of geometric earthworks on the eastern side of the Everglades, not far from Indiantown.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

Illinois. At the beginning of the 1931 season, the University of Illinois field party continued investigations begun in the summer of 1930 in the Utica-Starved Rock region. No further excavations were carried out on Plum island, but a village one mile to the east of that site was studied. It yielded fire and refuse pits with pottery and artifacts similar to those found in the top levels at Plum island. Two mounds were explored on the south bank of the Illinois, in the Starved Rock State Park, just across the river from Plum island. Village site materials and scattered burials occurred in a small ridge near the mounds. Another mound at Henry, Illinois, some 15

miles west of Utica on the Illinois, was trenched, disclosing a culture strikingly different from that encountered in the Utica-Starved Rock region.

In July, the expedition moved to Jackson county, southern Illinois, with headquarters at Murphysboro. Mounds, village sites, bluff burials, stone cist graves, and pictographs were found in close association, centering about Fountain Bluff. Two village sites of a single culture were explored. Stone cist burials and extended burials occurred side by side in one of them. The cultural features of the Tennessee-Cumberland region predominate in this part of the state. Mr. Albert Carter recorded available rock carvings and paintings in Jackson county and adjoining regions. There is evidence that the pictographs of southern Illinois were once numerous, extending from Kentucky through Illinois to a point north of the Cahokia region.

From August to November, Mr. Gene M. Stirling directed excavations in another mound of the Cahokia group on the Powell farm, near East St. Louis. Some remarkable filled tunnels running in series obliquely through the mound structure have proven an archaeological puzzle. Underneath the mound large circular depressions, 30 to 40 feet in diameter and six to eight feet deep, which may be house-pits, are yielding the best collection of Cahokia pottery yet obtained. The sub-mound village culture reveals a Cahokia series uncontaminated by later and more recent cultures in the valley. Outside the mound occur intrusive burials from a distinct, though possibly related, culture.

Arthur R. Kelly,
University of Illinois

During the spring of 1931, the University of Chicago carried on minor excavations in the vicinity of Chicago, primarily for the purpose of training graduate students. About the middle of June, the regular field party, consisting of 15 graduate students and two supervisors, returned to Fulton county in central Illinois to continue work initiated last season. Three groups were kept on survey, locating and investigating the Indian sites of the county, and studying all local collections. Seven major excavations of mounds and four of village sites were undertaken, as well as many minor excavations. In all, about 150 skeletons were secured, in addition to objects of material culture.

The results of greatest interest were: (1) the finding of a stratified village site in which the "Hopewell" materials lay below and separated from a "bluff culture" of prehistoric age. This verifies conclusions of the previous year and gives us a tentative chronology of four cultures found in central Illinois. (2) Last year, nine skeletons were removed from the black sands underlying a large "Hopewell" mound. Since the physical type and culture differed from that in the mound, it was believed that a considerable time must have elapsed between the lower burials and the construction of the mound itself. A portion of the site was left undisturbed at the end of the field season of 1930. This was excavated during the summer in the presence of two geologists. About two feet below the base of the mound was found a fire level and a crude platform of stones. Still below this was a second fire level and slightly to one side, a human burial. Soil profiles which had developed in the

black sands ran over and through the fire levels and the skeleton, but had not developed in the mound. It is thus evident that the burials long antedate the construction of the mound, and that the profiles have appeared since the interments took place. The shortest time allowed by the geologists for the profiles is 2,000 years, and both were inclined to double that figure. (3) A mound of Hopewell type, lying in a crescent of similar mounds, yielded a central burial pit containing 30 skeletons. Despite their rather bad state of preservation, these bodies furnish us with the largest group from this culture yet found in Illinois. (4) Near the close of the field season, five sites, consisting of depressed circles with raised edges, were located. Time allowed for the excavation of only one, so that definite conclusions cannot be drawn at this time. There is, however, a striking similarity to the earth lodge.

Fay-Cooper Cole,
University of Chicago

Indiana. The preliminary survey being undertaken by the Indiana Historical Society and the Historical Bureau has proceeded, as originally planned, along the principal water courses, county by county. Glenn A. Black, of Indianapolis, made a survey of Greene county, on the west fork of White river, identifying 149 sites as camps, villages, trails, forts, and workshops, and 60 as mounds, though some of the latter are still recorded as problematical. The large Baker-Lowe "mound," from which considerable material has been taken at different times, was partially excavated, and shown to be a natural formation used as a cemetery. In another cemetery there was a deposit of refuse and of calcined human and animal bones six feet below the surface. Many articles of bone, stone, and shell were recovered from this site. Another excavation revealed a primary mound on which a sandstone tomb had been constructed. There were traces of three logs which might have served as supports to the roof stones of the tomb. While the skeleton was nearly entirely disintegrated, a copper ear spool and a copper celt deposited in a leather bag were secured. The only shell heap found in the county yielded one small sherd, radically different from those at other sites.

J. Gilbert McAllister, of the University of Chicago, undertook a survey of Porter county, finding little remaining evidence of reported sites. Pottery finds were confined to the banks of the Kankakee. An earthwork of two low concentric embankments, roughly semicircular, was studied. Seven mound sites were located: one containing at least ten tumuli, another four, and another three. In the vicinity of Boone Grove and Malden, mounds averaging about six feet in height and containing burial pits were located upon natural elevations. On the banks of the Kankakee, a sand mound was dug in which scattered burials were found. The material culture from both types of mounds, represented by articles of copper, shell, and stone, suggests a Hopewell influence. However, three complete Algonquian type pots were also found.

At Cedar Point, in Kosciusko county, Eli Lilly, of Indianapolis, conducted a separate excavation. In various former grading operations, from 10 to 14 Indian skeletons had been discovered at this site. The excavation in October revealed four

hearths of heat-cracked stone, varying in depth from 6 to 30 inches below the surface. A circular shell gorget about $2\frac{1}{4}$ inches in diameter was found in an infant burial, the bones of which were in very bad shape.

C. B. Coleman,
Indiana Historical Bureau

For six weeks during the winter of 1930-31, and seven weeks of the summer of 1931, the Buffalo Museum of Science conducted field operations near Cromwell, Indiana, where the skeleton of a mastodon was being excavated by members of the Richmond-Buffalo Museum expedition. The remains were found in a saucer-shaped depression of about 150 feet in diameter. It contained a 10 to 12 inch stratum of muck at the surface, an 8 to 10 inch stratum of peat, and a 2 to 7 foot stratum of clay underlain by a gravel formation. The skeleton rested on the clay, but protruded upward through the peat. The original find, a tooth, was ploughed out of the muck. Two dart points were found within a radius of 20 feet from the skeleton, one broken at the base, the other at the tip. One was buried in the peat about 14 inches below the ground surface, the other about 22 inches, on the clay where the mastodon skeleton rested. Charcoal was found scattered over the whole area of the excavation, on the clay, and under the remains. A log, about three inches in diameter, that had been burnt off, lay on the clay in a horizontal position. Quantities of large chips of wood were found under the skeleton and surrounding it. Below the mastodon remains, under the clay stratum and on the gravel formation, were tree stumps with the roots in place, and tree trunks associated with cones and needles. Pond snails and shells were found with the mastodon and at the lower, or tree, level. A few extinct species have been identified, but the larger part of them are recent.

Everett R. Burmaster,
Buffalo Museum of Science

In May, 1931, Dr. Moorehead of Phillips Academy, went to Indiana, spending three weeks on some minor excavations, during which one or two mounds were tested. He assisted the state authorities with reference to the selection of several mound groups to be preserved in state parks

W. K. Moorehead,
Phillips Academy, Andover

Iowa. Desk work and care of the collected materials accounted for a large part of the activities of the State Historical Society of Iowa during the 1931 season, in addition to which, however, four short trips were made to points on the middle and upper Cedar and Iowa rivers. These brief surveys resulted in locating nine village sites, as well as seven groups of mounds in Hardin and Bremer counties made up of conicals and linears. These last are quite similar to the mound groups already reported for Webster and Boone counties in the Des Moines valley. Several local collections were put on record. In Linn county, two new rock shelters were discovered, one of which was partially excavated, the finds, as usual, proving to be of the Wood-

land type. Correspondents of the Survey reported Indian burials as coming to light in three places on the Missouri hills and two places in gravel pits near Stratford. As these were of types frequently recorded in Iowa, they were not given a personal examination by the undersigned. Mr. Ellison Orr made detailed studies for the survey of two bluff mounds and one cave with petroglyphs in Allamakee county.

Charles R. Keyes,

State Historical Society of Iowa

Kentucky. The Department of Anthropology and Archaeology of the University of Kentucky devoted the entire summer to the archaeological survey which has been in progress for the past six years. In many remote counties the survey was incomplete, and it was necessary to make a visit of exploration to each of these areas. The field party traveled some 3,000 miles and visited 68 county seats. So thorough was the work of the past summer that the state survey is now in preparation for publication. As a result of the season's work, many new sites have been discovered, additional information has been procured about other sites, the locations of which were previously known, and a number of sites have been located where it is thought exploration would yield large returns of information. While no specific excavations were undertaken during the summer, it is felt that the work accomplished was as important as anything which has heretofore been done in a similar length of time.

Wm. S. Webb,

University of Kentucky

Louisiana. Mr. Winslow M. Walker of the Bureau of American Ethnology made a brief survey along the Red river valley in the northern part of Louisiana. At Jonesville he made some excavations in the remains of buildings laid bare at the base of a flat mound which was being removed for use in road building operations. Mr. Walker left the state in September, but returned during November and December in order to visit mounds and mound groups throughout the northern part of the state. As a result of this survey, he found many worthy of intensive investigation.

Dr. John R. Swanton, of the Bureau, devoted considerable time in Arkansas and Louisiana to making an archaeological reconnaissance of various mounds and village sites.

H. W. Dorsey,

Chief Clerk, Smithsonian Institution

Massachusetts. During 1931 Dr. Moorehead did some excavating on Cape Cod, where Mr. Howard Torrey has conducted researches for a number of summers. The Department of Archaeology at Phillips Academy is encouraging local men with training in archaeology to study and develop the various regions in which they reside. The results are satisfactory, the work is carefully done, and the usual photographs, maps, and field notes are in evidence.

W. K. Moorehead,

Phillips Academy, Andover

Michigan. During the summer Dr. W. B. Hinsdale of the Museum of Anthropology at the University of Michigan made two reconnaissance trips covering the western part of the lower Peninsula and the eastern part of the northern peninsula, in order to verify reports of additional sites and to visit local amateurs. In July Dr. Guthe trenched a conspicuous small mound on the eastern shore of Lake Gogebic, near Irontown, in the northern peninsula. The center of the mound had been completely destroyed by vandals, but a handful of cord-marked potsherds, a copper awl, broken human bones in the fill of the old excavations, and traces of an ash layer at the base of the mound were secured. Later in the summer he dug two sand mounds in Oceana county, which revealed only meagre information associated with a few burials, and completed the excavation of a mound near Muskegon, which had been opened by local amateurs, who had encountered a child's burial with which were associated articles, including a complete pottery vessel, which indicated definite Hopewell influence.

Carl E. Guthe,
University of Michigan

Mississippi. The Mississippi Department of Archives and History cooperated with the National Museum, represented by Mr. Henry B. Collins, Jr., during a few days in January in a study of Indian village sites in the vicinity of Natchez. By a comparison of prehistoric potsherds collected from that region with sherds from the historic "Fatherland" mound opened by this Department last season, one of the chief villages of the Natchez tribe was definitely located as having occupied a bluff overlooking St. Catherine's creek about three miles southeast of the present city of Natchez, on the basis of the types of sherds and other artifacts found on the surface. Another site on Second creek, about 10 miles to the south, was shown by the same method to be prehistoric, although hitherto erroneously considered as the location of the White Apple village of the Natchez. The Department was represented by Moreau B. Chambers and James A. Ford.

Dunbar Rowland,
Mississippi Department of Archives and History

Nebraska. Dr. William Duncan Strong, of the Bureau of American Ethnology, conducted an archaeological and ethnological reconnaissance in Nebraska and the Dakotas during August and September. He visited many sites and made preliminary excavations in an important stratified site in western Nebraska.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

The Nebraska State Historical Society has continued its survey of archaeological sites during 1931. Work was done in the Loup river valley from 20 miles west of Fullerton to the mouth of the stream, and at isolated localities along the Platte

river, including sites near Clarke and Yutan. Cass and Sarpy counties were also visited and explorations made along Shell creek near Schuyler.

E. E. Blackman,
Nebraska State Historical Society

From the middle of February until the first of June the University of Nebraska Archaeological Survey, taking advantage of the mild spring weather, spent frequent week ends in the field. During the spring recess intensive excavation was started at a village site on the Loup river in Nance county and was continued for two weeks later in the summer. The village is marked by 57 refuse mounds as well as large quantities of broken pottery, bone, and shell. The refuse mounds were mapped and five of them trenched. Although there are no surface indications, systematic borings led to the discovery of two house sites, both of which were excavated. They were each approximately 30 feet in diameter, had 4 central and 12 outer posts, and an eastern entrance way. In accord with the traditional Pawnee house, the buffalo skull shrine was opposite the entrance of the one first uncovered. The only evidence of European contact consisted of a few pale blue glass beads and sheet copper. No evidence of the horse was encountered, although the refuse heaps were rich in the skeletal material of native animals. The ceramics, while similar in design, were of much better grade than those of the historic Pawnee sites studied. At a historic Pawnee village near Linwood, two houses, one partially superimposed upon the other, were uncovered. At Schuyler an earth lodge 50 feet in diameter, with four central posts, an eastern entrance, and eight rich caches, was opened. The site appears to be proto-historic, and, like the one in Nance county, yielded no horse bones. At Sweetwater on the South Loup, three prehistoric earth lodges were excavated. One was square, one circular, and another was of intermediate form, probably representing a transitional type. The decorative designs of the ceramics showed affinity to those of the square house and other prehistoric sites of the upper Republican river. But while the designs from both areas are similar, the technique of application is different. In the Republican river area, the design was applied by incision, while in the Sweetwater group, the cord-wrapped paddle was used. Bone work (especially fish hooks) and pipes likewise indicate southern contacts.

In general, the research of the past year shows: (1) that the ceramic art was highly developed throughout central and southern Nebraska, but deteriorated rapidly with the advent of the horse, and (2) that in this portion of Nebraska, at least, a Caddoan or proto-Pawnee group had been dominant for several centuries and became confined to a restricted habitat on the lower Platte and Loup rivers only in comparatively recent years. A survey trip by several members of the party concluded the summer's work, the itinerary including investigations on the Medicine creek at the forks of the Dismal and on a highly important and very ancient stratified site at Scottsbluff; a drive through South Dakota to the Plains Archaeological Conference at Vermillion, and a brief tour to certain Arikara sites on the Missouri. The field party included five university students, under the supervision of Dr. W. D.

Strong and the active field leadership of Mr. Waldo Wedel, and with the financial and scientific cooperation of Mr. A. T. Hill of Hastings.

Wm. Duncan Strong,
Waldo Wedel,
Earl H. Bell,
University of Nebraska

During 1931, the plans for archaeological field work by the Cook Museum of Natural History had to be partly curtailed. However, examination and reconnaissance work was done at several important sites in the Niobrara, North Platte, and Hat creek valleys in northwestern Nebraska. Owing to the heavy deposits in some localities where artifacts and fossils have been found in apparent association, their removal had to be temporarily postponed until more propitious conditions exist. One slightly modified "Folsom type" flint point was found in a site indicating considerable antiquity, at a spot where much work is needed.

Harold J. Cook,
Cook Museum of Natural History

While recently exposing a considerable part of an articulated skeleton of mammoth in Nuckolls County, Nebraska, Mr. A. M. Hastings, Director of the Hastings Museum, Hastings, Nebraska, and his staff encountered an artifact about midway beneath the left scapula of a mammoth skeleton. Mr. Brooking and another assistant, Myron Youngblood, were present when the find was removed by Junior Brooks before its nature was discovered. While it is unfortunate that the artifact was removed from the position where it was uncovered, the nature of the undisturbed matrix, its situation and the integrity of the discoverers exclude doubt of its original association with the mammoth skeleton. It must be regarded as contemporaneous. The formation in which the skeleton was found consists of stratified layers of sand and gravel of varying thickness, separated by thinner strata of sandy silt and dark gray clay or marl. The several feet of these deposits are overlaid with aeolian sand, capped with prairie loess, the overlying deposits having a total thickness of 16 feet. Layers of coarser sand and gravel are exposed below the skeleton to a depth of about 5 feet, where they disappear in the sands and boulders of a normally dry stream channel. At times this channel carries a large volume of flood water, and through undercutting and caving, both the skeleton and a vertical section of the deposit were exposed. This artifact is referable to the "Folsom" culture, and like points sometimes found elsewhere than the type locality, is crude in workmanship. The tip is blunted and the edges show evidence of hard usage.

J. D. Figgins,
Colorado Museum of Natural History

Nevada. The Southwest Museum has carried on comparatively little field work this year, although the excavation of Gypsum Cave in Clark county, Nevada, was completed during the month of January without changing materially the results

previously announced. The most important find during January was the discovery of another fireplace near the first in Room 1 beneath two unbroken layers of ground-sloth dung at a depth of approximately eight feet. The fuel had been ground-sloth dung for the most part, and the fire had been trampled on while still burning, if we may judge by scattered pieces which had scorched the ground where they fell. The lower layer of dung rested, without trace of burning, directly upon the remains of this camp-fire. A full report of this work is approaching completion.

M. R. Harrington,
The Southwest Museum

New Jersey. Last summer the New Jersey State Museum, with the cooperation of the University of Pennsylvania Museum, made a thorough examination of the Bevans and Moody rock shelters in Sussex county. Miss Dorothy Cross of the University of Pennsylvania Museum had direct charge of the work under the supervision of Dr. Henry B. Kummel of the Department of Conservation and Development. Both sites yielded varieties of stone implements, a few bone articles, numbers of animal bones and shells and good collections of potsherds. No perishable materials were found. The deposits, both within the shelters and in the talus in front of them, indicated intermittent occupation over a considerable period. Although objects were found to a depth of two to three feet, there was no indication of cultural change. The Bevans shelter contained no articles of European manufacture, but a few European trade articles were found in the Moody shelter. The potsherds at Bevans indicate that the site had been occupied by the Delaware, particularly the Munsee.

Kathryn B. Greywacz,
New Jersey State Museum

New Mexico. The archaeological survey undertaken by the Laboratory of Anthropology in January, 1930, has been progressively continued and extended during the past year under the immediate direction of Dr. Harry P. Mera, Staff Archaeologist, with the assistance of Mr. Stanley A. Stubbs. During the year a considerable area was covered, including the Canyon Pintado, the upper Ojo Caliente creek region, the upper Chama drainage, the Petrified Forest National Monument, the upper course of the eastern Rio Puerco, the western Rio Puerco, parts of the middle Rio Grande area, and the regions east of the main mountain ranges of New Mexico. During April the survey staff attended the Gila Pueblo conference at Globe and visited numerous sites en route in the Verde valley and the Tonto basin. As a result of the year's survey 183 new sites have been classified and added to the Laboratory record, thus bringing the number of abstracted sites available for study at the Laboratory to a total of 680 sites.

During the month of May Dr. Mera and his assistants continued the reconnaissance and excavations, initiated in the fall of 1930, in the Guadalupe mountains of southeastern New Mexico, for the purpose of tracing, if possible, the limits of the so-called Basket Maker culture of that area, establishing the principal char-

acteristics thereof, and setting up its real sequence with later cultures. Excavations were conducted in selected caves throughout the length of this range during the present year with reasonable success, and a report is now in process of preparation by Dr. Mera covering the two seasons' work in this area.

A Dendro-Archaeological project, involving the drainage of the Rio Grande of New Mexico, was initiated by Dr. A. E. Douglass, of Steward Observatory, University of Arizona, and was carried forward under the immediate direction of Mr. W. S. Stallings, Jr. of our staff through a four-month period of field collecting and examination of material, prior to his departure for Tucson for the purpose of conducting his laboratory work thereon in close association with Dr. Douglass. The advisability of testing the climatic homogeneity of the area to be considered prompted a survey of living trees in various strategic parts of the Rio Grande drainage area, resulting in the collection of 324 specimens. In the Pajarito plateau a series was collected which might show effects of factors other than precipitation on tree growth. Pottery sequences were used as a working basis for dendrological collections. Following Dr. Douglass' original plan of the basic tree-ring sequence from known to unknown, borings were taken from beams in various historic structures of the region to augment collections previously made by Kidder and Douglass. The archaeological collections consist of a numerical count of 177 bags of charcoal and 257 specimens of wood, and comprise a series from the Later Glaze ware and "biscuit" pueblos, downward through the Glaze series to and including black-on-white sites, with scattered material represented from possible late Pueblo I or early Pueblo II sites in the northern Gallinas country. Laboratory studies now in progress by Mr. Stallings indicate that the collected material of the present year will yield a chronology back to 1100 A.D., if not earlier, and that the early material from the Gallinas country is not expected to crossdate with any other material collected this season. It is the wish of the Laboratory to continue Mr. Stallings in this tree-ring survey to its successful completion, because of the importance of establishing a tree-ring chronology within the drainage of the Rio Grande where variable factors not encountered in the earlier Flagstaff sequence set up by Dr. Douglass have already developed. The records of this tree-ring survey will, it is hoped, be made available in due course by publication.

Mr. Robert P. Merrill of Grand Rapids, Michigan, a volunteer member of the Laboratory staff for the summer of 1931, cooperated with the American Museum of Natural History in accomplishing an important transit-stadia survey of the Folsom quarry site, and in mapping, photographing, and reporting on areas and features adjacent thereto. In addition, he assisted Mr. Richard Snodgrass in reconnoitering for further evidence of late Pleistocene man, particularly quarry sites of materials used in the Folsom points.

J. L. Nusbaum,
Laboratory of Anthropology

Continuing the survey work done in Arizona from May to July, the field parties from the Gila Pueblo moved to Reserve, New Mexico, on August 1st, worked up

the Tularosa and Apache creeks, and south down the San Francisco to Glenwood, adding 200 more sites to our total for the summer, and tying up with the work which I did in 1927 in the vicinity of Springerville and the Upper San Francisco around Luna. Late in August we moved over to the Upper Mimbres and collected on the Sapillo, the Upper Mimbres and south of Silver City in the Mangus creek drainage. September first we sent an expedition into eastern New Mexico, working up the Rio Grande from El Paso, through Alamogordo to Gran Quivira, thence east and south to Roswell.

Harold S. Gladwin,
Gila Pueblo, Globe, Arizona

The Logan Museum of Beloit College entered its third season in Southwest archaeology with five students of anthropology in a field party led by Paul H. Nesbitt. Work was resumed at the Mattocks pueblo ruin, a prehistoric village located in the upper reaches of the Mimbres valley. The completed excavation of the ruin was finished early in the month of August. Eighteen rooms were excavated, including two pit-house structures. Although a good deal of the data obtained duplicate those of previous seasons, additional information was obtained on the chronological age of Mimbres black-on-white pottery. In house types characteristic of the final phase of occupancy, Mimbres black-on-white ware was found in association with sherds of El Paso polychrome, Chupadero black-on-white, and Gila polychrome. In the earlier phases of Mimbres black-on-white development, these wares are absent. We must recognize, then, an earlier beginning for Mimbres black-on-white ware than for the above wares, which did not gain popularity, at least in the Mimbres valley, until the former ware was on the decline. During the latter part of August, several days were spent surveying the archaeological field near Alamogordo, New Mexico. A promising site was purchased here by the Logan Museum for future study.

Paul H. Nesbitt,
Logan Museum, Beloit

During the summer of 1931, a field party from the University of Minnesota consisting of four graduate students, one Senior-college student, my assistant Mr. Lloyd A. Wilford, Mrs. Jenks and myself, spent 15 weeks excavating at our Galaz ranch Mimbres site in southwestern New Mexico. Two large rectangular kivas were completely excavated. A part of the "North Kiva" had three habitation levels superimposed upon it. This kiva had excellently plastered walls and floor, and a few supporting red cedar posts were still imbedded in the walls. The other, or "Parrot Kiva" had walls of good rubble stone work, in which 63 red cedar posts were imbedded. Later house structures had been built over the entrance, but none had been constructed over the kiva proper. Two flat, polished green stone slabs were imbedded in the floor. Under one, a parrot had been buried. Around the neck of the bird were 82 turquoise beads, while around its legs were between 500 and 600 shell beads. Each kiva had a fireplace, sipapu, and an inclined entrance way.

but no evidences of ventilators, deflectors, pilasters, or side benches were found. A small pit-house type of kiva was encountered with a ventilator, but without a sipapu or an entrance way through a side wall. It had had two floors, each of which had its separate opening into the common ventilator shaft. Fragments of two slab-side circular structures were excavated which are reminiscent of an earlier culture stage—either Basket Maker III or Pueblo I. Partly below a dwelling of the rubble type, a pit-house structure was found whose floor partly covered a deep, circular cist, one of several, and a new and interesting architectural feature. Several hundred pottery vessels were recovered, including a larger proportion of early types of painted designs than before, four with polychrome decoration, four large flat cooking vessels, and four storage vessels. Although human skeletal material is badly disintegrated at this site, we saved 36 crania and a limited amount of other skeletal materials, some of which revealed evidence of injury.

Albert Ernest Jenks,
University of Minnesota

Mr. Edgar B. Howard, a member of the staff of the Museum of the University of Pennsylvania, excavated caves in the Guadalupe mountains of southeastern New Mexico. His researches resulted in most important data regarding ancient man in America, the results being the better documented inasmuch as much of the work was done in cooperation with Dr. Barnum Brown, paleontologist of the American Museum of Natural History. The principal cave lay on the eastern slopes of the Guadalupe mountains about 50 miles west of Carlsbad. It was extremely dry and contained eight feet of dust and debris. Typical artifacts of early Basket Maker culture were encountered on the surface and to a depth of 20 inches below it. Three burials were uncovered, one consisting of charred human bones within a fine-twined woven bag which was wrapped in an antelope hide. Beneath this, to a total depth of 7 feet, were found hearths, artifacts, and bones of extinct animals. Among the latter were species of bison, antelope, horse, camel, musk-ox, and California condor. Dr. Brown is now studying these intensively. Associated with bones of an extinct species of bison, at a depth of about 4 feet beneath the lowest Basket Maker burial, was found a hearth and a spear point of Folsom Culture type; a musk-ox horn was found at a slight distance away on the same level. The paleontological remains, especially those of the musk-ox, indicate very definitely that the climate of this region at that time was considerably more humid and colder than at present, and suggest an approach to glacial conditions.

J. Alden Mason,
Museum of the University of Pennsylvania

New York. The field group of Long Island Chapter, New York State Archaeological Association, has had an active season. The excavation of the village site at Noyack, Southampton, has been finished. The recoveries show a culture closely paralleling that of the site excavated by Harrington, Parker, and Skinner at Sebonac creek; some traits have been amplified, others more fully illustrated, and much in-

teresting pottery has been secured. It was here that W. W. Tooker, during the removal of a tree many years ago, secured his bone fishhook, long described as unique for the region. At this and other sites, we have found a number of such fishhooks, and also harpoons. A trait frequently encountered was the use of stone mortars in the firepits, apparently as griddles for the roasting of fish. Excavation was also begun by Goddard at a camp site in Riverhead, with some unusual finds. This will be continued next season.

Charles F. Goddard,
Long Island Chapter,
New York State Archaeological Association

During the month of April, 1931, the exploration of the Atwell Site, near Cazenovia, New York, was undertaken by a group of students from Syracuse University interested in North American prehistory, under the direction of Thorne Deuel, archaeologist in charge. In the camp refuse were found sherds from the well-known Iroquoian pottery forms with overhanging collars, and human portrait effigies at the corners, heavy celts of square section, a square-rimmed pipe-bowl, triangular projectile points, bone awls, and charred corn. The site appears to be late 16th century Iroquoian, probably Onondagan, and exhibits no evidence of white contact.

Thorne Deuel,
Syracuse University

North Dakota. During the past year, the State Historical Society of North Dakota has continued its survey of Indian village sites. A file of maps has been prepared, and a collection of artifacts was secured at each site if it was not already represented in the Historical Society's collections. A card index, filed by counties, is being prepared of all village sites, mounds, or other Indian works. Recently the Society has been able to secure title to the balance of the Huff Indian village site, one of the most interesting sites in the state, and a flint quarry on the Knife river north of Hebron. A large round or conical mound was found near Heimdal, North Dakota, and the Society was able to make arrangements for its excavation. An accurate chart of the mound was made while the excavation was in progress. Many objects of interest were found.

Russell Reid,
State Historical Society of North Dakota

A third expedition from the Logan Museum of Beloit College to the Missouri valley region of the Dakotas was led by Research Assistant Alfred W. Bowers, and aided by four anthropology students of Beloit College. An exhaustive survey was made of early Arikara and Mandan sites with special reference to pottery in an effort to clear up pertinent ceramic problems. Marked differences are noted in rim shapes, design, and methods of design application.

Paul H. Nesbitt,
Logan Museum, Beloit

Ohio. Mr. Robert Goslin, Assistant in Archaeology at the Ohio State Museum, spent three weeks at a village site near Huron, Ohio, during the month of July. The cemetery on this site was excavated during the summer of 1930. Mr. Goslin examined a number of pits and other deposits in the area showing signs of domestic activities. The site is especially interesting in that it seems to exhibit both Iroquoian and Algonquian features, and is situated less than a mile from two Hopewell type mounds which were completely examined in 1930. Rim-sherds show both the chevron mark of the Iroquois and the so-called Algonquian punctate patterns. Dr. E. F. Greenman made three or four trips to examine accidentally discovered burials.

E. F. Greenman,

Ohio Archaeological and Historical Society

Oklahoma. The Department of Anthropology of the University of Oklahoma did no excavation this year, but it has been engaged in locating and mapping archaeological sites in the state, and has received a grant of \$100 from the University research fund to aid in this work.

Forrest E. Clements,

University of Oklahoma

Pennsylvania. The archaeological work of the Pennsylvania State Historical Commission, during the field season of 1931, was confined to finishing up work begun in 1930 near Safe Harbor, on the lower Susquehanna river. A total of 188 plaster moulds, together with charts, scale models, and photographic records of the prehistoric rock writings have been moved to the State Museum in Harrisburg. Sixty-eight of the groups of writings were drilled out of the river bed and carried to the Museum. The islands upon which they were found are now covered by 40 feet of water in the basin of the Safe Harbor Water and Power Corporation. The search for a mainland occupation contemporaneous with the first and second period petroglyphs was continued. Two large village sites were thoroughly excavated and recorded. Another site, partially explored and temporarily recorded as Algonquian in a 1930 reconnaissance, proved, upon being thoroughly examined, to have a secondary prehistoric Iroquoian occupation. Important physical remains were recovered from this site. Two hundred and sixty bell-shaped refuse pits, averaging five feet in depth, were excavated on a prehistoric Iroquoian village site near the river town of Washington Borough. A number of large pottery cooking vessels were recovered, together with numerous objects made of bone and antler, and a vast amount of animal bone. Twenty burials were recorded in the village layer. The expedition, during 1930-31, has carefully explored and recorded data on one prehistoric Algonquian site and one prehistoric and two historic Iroquoian sites.

Donald A. Cadzow,

Pennsylvania State Historical Commission

During 1931, several groups have done archaeological field work in Pennsylvania. The work at Safe Harbor, under the State Historical Commission, is reported

upon separately by Mr. Cadzow, its director; the Moravian Historical Society and local organizations have done some work near Wyalusing, Pennsylvania; the Cambria County Historical Society removed some rocks with pictographs from near Portage to their headquarters; Mr. Ross Pier Wright and sons, of Erie, have continued their studies; and the Museum of the University of Pennsylvania sent a worker to the Trenton Museum to cooperate in investigations near Bushhill, Pennsylvania.

Under the auspices of the Tioga Point Museum, and with the aid of a grant from the National Research Council, Mr. J. E. Griffin devoted two months to field work in the Upper Susquehanna valley, in and about Athens. The purposes of the field work were: to arouse the interest of the people of the locality in the wealth of aboriginal remains existing there; to demonstrate field methods to those interested in preserving these local remains, so that they might keep an accurate record of their findings; and to ascertain, if possible, the sequence of aboriginal cultures in the valley. The first location excavated was apparently an historic Delaware village site. The artifacts recovered consisted of the usual camp refuse, including potsherds, and bone and stone artifacts. Most of this material was obtained from refuse pits. The first of two burials found contained four rather large late Algonquian pots and a white clay trade pipe. At the time of the meeting of the Society for Pennsylvania Archaeology the field workers had uncovered, on the west side of the Chemung river just south of Athens, an Algonquian camp site from which two large pots were taken, and part of an Iroquoian burial ground. One of the six burials studied at the latter site contained a pottery effigy pipe with a human face on the front and rear of the bowl. The expedition also made an incomplete survey of the vicinity and located a number of sites which it is felt would be well worth investigating.

Frances Dorrance,

Society for Pennsylvania Archaeology

Tennessee. Mr. Frank M. Setzler, Assistant Curator of Archeology in the U. S. National Museum, spent part of September in western North Carolina and eastern Tennessee, examining a large private collection of artifacts from the former Cherokee country for the Museum, and watching for a few days the partial excavation of two village sites by local residents.

Walter Hough,

U. S. National Museum

During 1931 the East Tennessee Archaeological Society completed its study of three mounds on the McKenzie farm and did some excavation on the Anderson farm mound in Sequatchie county. Preliminary surveys were made at Citico, at the village sites and mounds on the Smith and Montgomery farms on the Tennessee River, at the Bailey mound and village site, at the two mounds on the Waite farm, and at the sites of several rock shelters along the Tennessee river.

Charles K. Peacock,

East Tennessee Archaeological Society

Texas. Mr. Frank M. Setzler, Assistant Curator of Archeology of the U. S. National Museum, was detailed to the Bureau of American Ethnology for the purpose of conducting an archaeological investigation in Texas. In the latter part of April he examined several sites at Victoria and Brownsville along the Gulf coast. During May he excavated four caves and one rock shelter on the Mollie B. Knight ranch in Presidio county. In one of the caves he secured a total of 70 specimens, including baskets, matting, cradles, sandals, beads, corn, gourd fragments, and one skull. No pottery was found, and there was nothing to indicate European influence. The coiled basketry found in the Knight cave differs from that of the Basket Makers of the San Juan area; other artifacts from the same caves resemble in some respects material found by Mr. Edgar B. Howard, of the University of Pennsylvania Museum, in sites in the Guadalupe mountains in northern Texas and southern New Mexico.

H. W. Dorsey,
Chief Clerk, Smithsonian Institution

During 1931, the University of Texas continued its archaeological research in that portion of the state which lies, roughly speaking, east of longitude 96° W. This region is heavily forested and is identical in environment with Arkansas and northern Louisiana. It contains rich evidences of a high type of village life. The pottery will compare favorably with that of any other part of the Mississippi Valley and is relatively abundant. Eight hundred specimens of complete pots were obtained from one burial place in Harrison county. Other elements of the culture of this region are in keeping with the pottery. Numerous village sites have yielded excellent stone artifacts, bone and shell ornaments, grinding stones, and other materials. In some instances we have been able to trace the outlines of house foundations indicating pole structures with wattle work, mud and thatch walls, and roof. Affiliations are chiefly with regions to the north and east, but there are traces of influences from the south and west. On the Red river, in Lamar county, we explored one village site and burial ground from which we obtained pottery of slightly different type from that of other parts of east Texas, as well as many gorgets and about 500 specimens of beads made of conch shell from the Gulf. One gorget has on it a human face, carved in relief, apparently indicating an effort at portraiture. We have done little more than reconnaissance work in other parts of the state this year.

J. E. Pearce,
University of Texas

The members of the Texas Archaeological and Paleontological Society worked in several parts of the state during the past year. Dr. Cyrus N. Ray studied the distribution of round and oval types of bedrock mortar-hole groups over a wide area. He also excavated two stone graves containing peculiar long-headed skeletons buried in a flexed position. In continuing his study of deeply-buried stratified sites, he discovered a hearth containing burnt stones and a thick layer of charcoal in one of the oldest and highest stream terraces. This hearth was exposed on the face of a

vertical bank, and was covered by five feet of horizontally stratified clays. Mr. E. B. Sayles continued his investigations of rock shelters in the vicinity of Abilene, finding pictographs and associated artifacts apparently indicating Basket Maker culture remains. Negative hand impressions outlined in red pigment were also found. He did some excavation in a series of prehistoric shallow trenches near Abilene, which were found to be eight feet deep, reaching a stratum of flint at that level. The dumps indicate that the mines had been worked intermittently over a long period. Mr. George C. Martin, of Rockport, continued his studies of Texas coast cultures. In September, he and S. W. Woolford, of San Antonio, headed an expedition into the little-known Big Bend region on the Rio Grande, where they found an unusually interesting rock shelter containing painted pebbles reminiscent of European finds. Mr. and Mrs. Alves and Colonel Crimmins have continued their work on rock shelters, pictographs and petroglyphs near El Paso. The work of Dr. W. C. Holden and Mr. Victor Smith is included under the reports of their respective local organizations.

Cyrus N. Ray,

Texas Archaeological and Paleontological Society

In March and June, 1931, Texas Technological College continued excavations started two years before in a slab-stone ruin on Antelope creek, about six miles south of its confluence with the Canadian river. The ruin is approximately 165 feet long and 60 feet wide. In some of the walls, which are of a heavy, substantial type of masonry, the slabs are set on edge, and in others the stones are horizontal. So far, about 20 rooms have been excavated. The work has been under the immediate supervision of E. J. Lowrey. Several additional months are required to complete this project. In June and July, 1931, an archaeological field class from this school excavated at the Pueblo site on the Tecolote river in New Mexico. The reason for selecting this particular ruin was to acquire data and material for a comparative study of the Panhandle-Canadian culture with the known Pueblo culture at Tecolote. A considerable amount of evidence indicating a similarity between the sites was secured.

W. C. Holden,

Texas Technological College

As a result of field work by the West Texas Historical and Scientific Society, 16 new sites have been added to the survey of the Big Bend region during the past year. This makes a total of 178 mapped locations. One hundred and fifty artifacts have been added to the museum collections, practically all from open camp sites.

Victor J. Smith,

West Texas Historical and Scientific Society

In continuation of the search for evidence of Folsom culture sites being conducted by the American Museum of Natural History, Mr. Richard M. Snodgrass of the University of Chicago, special field assistant in archaeology, spent his third

season of work in the southern Plains. In northwestern Texas, he examined certain quarry sites near Amarillo, and in the vicinity of Lamar, Colorado, several sites were excavated. The most important sites were surveyed and mapped by Mr. Robert H. Merrill. This particular part of the project was in cooperation with the Laboratory of Anthropology in Santa Fe.

Clark Wissler,

American Museum of Natural History

Continuing the survey work done in Arizona and New Mexico, a field party from the Gila Pueblo on October 1 went into eastern New Mexico and western Texas to cover the eastern slopes of the Guadalupe range, thence south along the Pecos river to its junction with the Rio Grande, and, after casting a wide circle, thence north up the Rio Grande to El Paso.

Harold S. Gladwin,

Gila Pueblo, Globe, Arizona

Utah. During the summer of 1931, Albert B. Reagan, of the U. S. Indian Field Service, cooperating with the Laboratory of Anthropology in Santa Fe, continued his archaeological studies in the Uintah basin, in Utah. His finds apparently show that four somewhat successive peoples occupied the region in remote days. Basket Makers; Pueblos of the Uintah (Willard-Beaver) stage, extending in time from the dawn of Pueblo culture far into Pueblo II, a people who made round-bodied drawings of humans, and a peripheral people possessing a culture similar to Basket Maker III who, in time, acquired Pueblo traits and became the Pueblo II people of the Fremont culture.

Albert B. Reagan,

U. S. Indian Field Service

The University of Utah conducted archaeological field work in the state from June 26 to August 7. A Pueblo culture, probably Pueblo II, was investigated around Great Salt Lake; villages of single-room, pole-and-adobe houses being found at several sites. It was ascertained that rectangular adobe-wall houses had been built as far north as Provo. A number of caves on the shore lines of Lake Bonneville were studied in order to correlate early human occupation with the stages of this lake. Excavation at a large cave on Promontory Point, begun last year, was completed. A cave at Black Rock, on the southern side of the lake, yielded eight feet of stratified remains bearing evidence of human occupation, indicating the cave was first used as a shelter immediately after the retreat of the lake from this level—perhaps 8,000 to 10,000 years ago. This early culture may form a link between such cultures as the earliest in Gypsum Cave and the Basket Maker of the Southwest.

J. H. Steward,

University of Utah

The archaeological reconnaissance of the basin of the Colorado and Green rivers in Utah, begun by the Peabody Museum in 1927 under the Claffin-Emerson

Fund, was carried on in northeastern Utah during this past summer. Beginning at Green river, Utah, the expedition covered both the east and west Tavaputs plateau. Nine Mile canyon, the Uinta basin to the foothills of the Uinta mountains, and the Ashley and Brush creek drainages. The remains of Pueblo cultures were found over this whole area. An atlatl and other Basket Maker artifacts, together with a long-headed skeleton, were uncovered in Nine Mile canyon. Throughout the Tavaputs plateau, both east and west of the Green river, were found granaries, habitation sites under overhangs, and open sites consisting of circular structures. The masonry of the latter was crude, but showed definite attempts at coursing which were limited by the undressed nature of the stones. In Nine Mile canyon (incorrectly called Minnie Maud on most maps), the greatest development in this area was discovered. Basket Maker remains occur in caves near the canyon floor; crevices and ledges in the cliffs hold many granaries; and on the points and promontories jutting out into the canyon are open sites, the masonry of which is, on the whole, superior to that of the rest of the region. Along the cliff walls, near the floor of the canyon, are many groups of pictographs. At the southern extremity of the Uinta basin, just south of the town of Myton, rock-shelter sites occur, mostly under large boulders. There are many pictographs on the boulders and cliff walls of this region. On Rock creek, north of the town of Duchesne and west of Talmadge, a village site with abundant potsherds was found. Just east of Roosevelt, in the drainage of the Uinta river, are the remains of wattle-and-daub walled houses which at times seem to have been supplemented by masonry foundations. Clay hearths were found here. Sites identical with these were found to the west of Vernal. North and northwest of Vernal in the Ashley and Brush creek drainages are pictographs, granaries, open sites, and caves. Some of the overhangs are exceptionally large and all of the caves are sandy. Dew-claw moccasins and many baskets have been found in this region. The last section visited was in the vicinity of Jones Hole, near the Colorado line on the Green river, where cave sites and pictographs were discovered.

In November, work was commenced under Mr. J. O. Brew at a site on Alkali ridge on the west side of Montezuma creek in southeastern Utah. The purpose was to excavate in search of Pueblo II material, and to make an extended study of this relatively less well-known period. Unexpected snowstorms stopped work after two weeks, but one house unit with kiva was completely excavated, showing an interesting masonry sequence from vertical slab to horizontal coursing. We hope to resume work here this spring.

Donald Scott,
Peabody Museum,
Cambridge, Massachusetts

Wisconsin. The extensive archaeological collections of the State Historical Museum of Wisconsin were increased by gifts and by specimens obtained through field research. During the University summer session, a large number of students took part in the excursions conducted by the Museum to mound groups and other

prehistoric and recent Indian sites and monuments. University students also assisted in the examination of mounds in several Wisconsin counties, including four earthworks in Dane county. A survey of the river region between the Madison lakes and the Rock river was completed. The Museum continued the location of the trails of the state, several of which were marked with tablets.

C. E. Brown,

State Historical Museum of Wisconsin

Because of the financial stringency, the Wisconsin Archeological Society has this year relied more than even before upon individual workers and municipal and county museums in continuing the work of the state survey. Printed instructions and report blanks have been distributed to a number of interested persons not members of the state society. Mounds and graves have been excavated in several counties and a number of previously unrecorded camp and village sites, planting grounds, sacred springs, stone shrines and local trails have been located. Attention has been given to several projects involving the preservation of additional groups of conical, effigy, and linear mounds. Markers will be provided for these by individuals and local organizations.

C. E. Brown,

Wisconsin Archeological Society

Eighteen mounds of an effigy group, situated near Bee Town, and two conical mounds near Cassville, of unclassified culture origin, were excavated during the summer of 1931 as the result of Milwaukee Public Museum investigations in Grant county, Wisconsin. A sufficient number of traits was determined for the effigy mounds to establish their close cultural affinity to previously examined effigy mounds in Wisconsin. An unusually large quantity of skeletal materials was secured for the Museum osteological collections, derived for the most part from a single reburial of disarticulated bones representing 35 individuals. An archaeological surface survey was completed for northwestern Grant county. In addition to this work, a village site on the shores of Lake Winnebago, recorded as an old Winnebago site, was excavated. A large study collection of material culture detritus was produced. It is expected that a detailed study of these materials will contribute greatly toward establishing the culture status of the prehistoric Winnebago.

W. C. McKern,

Milwaukee Public Museum

Archaeological field work has been done during the past year by representatives of several local organizations. The Neville Public Museum at Green Bay has continued the local archaeological survey reported last year. Mounds were examined in Lincoln, Oconto and Brown counties, and stone cairns were studied in Door county. A field meeting of the Brown County Historical Society was held. An officer of the Oshkosh Public Museum made excavations at a local village site which yielded numerous stone, bone and other artifacts and information. The Chain

o'Lakes Protective Association at Waupaca has completed a survey of the shores of the 21 lakes of the Chain, gathering information on the archaeological sites, trails, physiography, Indian place names, and history, myths and legends, and early maps of the area. An illustrated report has been published.

C. E. Brown

Wyoming. This past summer the University of Denver and the University of Wyoming collaborated in sponsoring the first season of an archaeological survey of eastern Wyoming. The director was Dr. E. B. Renaud, the field assistants were students—two from the University of Denver, two from the University of Wyoming, and a volunteer from Arizona. Seven weeks were spent exploring carefully selected districts in southeastern Wyoming, between Colorado, Nebraska, and the towns of Lusk, Casper, and Medicine Bow in Wyoming. Some 200 sites were visited and collections of stone artifacts made. A long reconnaissance trip was taken covering the northeastern part of the state. An extra week was spent studying a large group of remarkable pictographs in central Wyoming, for Science Service.

E. B. Renaud,

University of Denver

Alabama Anthropological Society
Alabama Museum of Natural History
American Museum of Natural History
Arizona State Museum
Buffalo Museum of Science
Bureau of American Ethnology

Cambria County (Pa.) Historical Society
Carnegie Institution of Washington
Chain o'Lakes Protective Association
Colorado Museum of Natural History
Cook Museum of Natural History
East Tennessee Archaeological Society
Field Museum of Natural History
Gila Pueblo, Arizona
Hastings Museum
Indiana Historical Bureau
Laboratory of Anthropology
Logan Museum, Beloit College
Los Angeles Museum
Milwaukee Public Museum
Mississippi Department of Archives and History
Moravian Historical Society
Museum of Northern Arizona
Museum of the University of Pennsylvania
Nebraska State Historical Society
Neville Public Museum

Alabama
Alabama, Arkansas
Texas
Arizona
Indiana
Alabama, Arizona, Arkansas, Florida,
Louisiana, Nebraska, Texas
Pennsylvania
Arizona
Wisconsin
Nebraska
Nebraska
Tennessee
Colorado
Arizona, New Mexico, Texas
Nebraska
Indiana
Arizona, New Mexico
New Mexico, North Dakota
Arizona, California
Wisconsin
Mississippi
Pennsylvania
Arizona
Alaska, New Jersey, New Mexico
Nebraska
Wisconsin

New Jersey State Museum	New Jersey
New York State Archeological Association	New York
Ohio State Archaeological and Historical Society	Ohio
Oshkosh Public Museum	Wisconsin
Peabody Museum, Harvard	Utah
Peabody Museum, Yale	Connecticut
Pennsylvania State Historical Commission	Pennsylvania
Phillips Academy, Andover	Indiana, Massachusetts
Phoenix Archaeological Commission	Arizona
San Diego Museum	California
Society for Pennsylvania Archaeology	Pennsylvania
Southwest Museum	California, Nevada
State Historical Museum of Wisconsin	Wisconsin
State Historical Society of Iowa	Iowa
State Historical Society of North Dakota	North Dakota
Syracuse University	New York
Texas Archaeological and Paleontological Society	Texas
Texas Technological College	Texas
Tioga Point Museum	Pennsylvania
U. S. Indian Field Service	Utah
U. S. National Museum	Alaska, Tennessee
University of Arizona	Arizona
University of Arkansas	Arkansas
University of Chicago	Illinois
University of Colorado	Arizona
University of Denver	Colorado, Wyoming
University of Illinois	Illinois
University of Kentucky	Kentucky
University of Michigan	Michigan
University of Minnesota	New Mexico
University of Nebraska	Nebraska
University of Oklahoma	Oklahoma
University of Texas	Texas
University of Utah	Utah
University of Wyoming	Wyoming
West Texas Historical and Scientific Society	Texas
Wisconsin Archeological Society	Wisconsin

CARL E. GUTHE, *Chairman*

REPORT FROM THE UNIVERSITY MUSEUM, PHILADELPHIA, OF ARCHAEOLOGICAL AND ANTHROPOLOGICAL ACTIVITIES IN RUSSIA, 1931

The University Museum, Philadelphia, with the cooperation of the Peabody and Fogg Museums of Harvard, sent a representative to Leningrad during the summer of 1931 to make a survey of archaeological and anthropological activities

in Russia and to establish contacts for the exchange of information, publications, and notes.

Mr. Eugene Golomshtok, a former student at Kazan University and a graduate of the University of California, who was chosen for the mission, found that there has been an enormous amount of work done in Russia in the fields under consideration and that most of this is entirely unknown to the scientists of America. Since the revolution, all private collections have become the property of the State and at the present almost every little town has a museum as well as a local society for the study of the history and the peoples of the region. In 1925 there were some seventeen hundred of these organizations. Scientific expeditions are numerous; these vary in size from those such as the Yakutsk expedition, with about a hundred members and a duration of five years, to small groups of students with the local archaeologist as the leader, penetrating into all regions of Russia and Siberia. There exists already an enormous amount of fresh material so far unavailable in the Western hemisphere.

Mr. Golomshtok has arranged with the leading Russian institutions for the permanent exchange of publications, photographs of objects in museums, and of original manuscripts by leaders in various fields, as well as for the loan and exchange of collections. In addition, he obtained extensive data for the study of the Palaeolithic period of Russia, shortly to be presented.

Information pertaining to the most recent and important discoveries and activities was collected, photographs obtained, and leading authorities consulted. Among this material, fairly complete data were obtained on the so-called "Pazirík Burial" in the Altai, where an excavated tumulus revealed an unusually rich civilization of nomadic people, culminating in the splendid burial of the Khan. The furniture of the graves was beautifully preserved, due to the peculiar conditions of the eternal frost. Ten mummified horses with richly decorated trappings, the elaborately ornamented coffin, and a number of artistically as well as archaeologically valuable objects from this grave are now in the Russian Museum in Leningrad.

Materials and photographs were obtained illustrating such finds as the Palaeolithic statuettes of Gagáрино, Maltá and Kosténki. Seven statuettes at Gagáрино (Central Russia) were carved out of mammoth tusks. A considerable number of bone tools: needles, awls, and perforators; and flint artifacts: high scrapers and crooked cutters were found at this station in 1927. At Maltá (near Irkutsk, Siberia) flint implements, a well developed bone industry, many articles of personal adornment, and fauna such as mammoth, rhinoceros, Arctic fox, and reindeer, were found in 1928. Especially interesting are the large pendants in the shape of birds and one of a fish. Nineteen specimens of statuettes of women, carved out of bone, resemble considerably the European and the Gagáрино type. Many have well pronounced steatopygy, pendent breasts, thin and weakly expressed arms, and other notable characteristics. According to newspaper reports a record number of upper Palaeolithic sculptures were discovered at Kosténki (central Russia) in 1931. Of the forty-two specimens, one is of especial interest: it is of stone, some 15 cms. in height, and represents a very primitive appearing creature. When viewed in profile, the

thick neck and protruding supraorbital ridges impress one with the similarity to the reconstruction of Neanderthal man.

Important discoveries have been made in Gagáрино, Kosténki, and Timonovka (central Russia), of house pits which culturally correspond to what in Western Europe is called the Aurignacian period. P. P. Ephimenko, one of the discoverers, asserts that similar finds have been made in the past by non-Russian archaeologists who failed to realize their significance.

Bones found in the region of the Podkumok river (Caucasus) are those of a female about 55-65 years old; they seem to represent the easternmost find of the Neanderthaloid type, and certain characteristics indicate that the Podkumok find is nearer present man than other finds of the *Homo Neanderthalensis*.

The grotto Kiik-Koba (Crimea) yielded rich palaeontological material important for its dating. The presence has been established of mammoth, rhinoceros, giant elk, bison, wild horse, and other extinct animals. In the sixth layer, less rich in animal remains, hearths and the burial of a man were found. Both detailed study as well as association with the Mousterian-like industry indicate that the Kiik-Koba man was very near to Neanderthal man of Western Europe.

It is not possible to discuss at length here the various other discoveries concerning which information was obtained. Data were also secured on the work of the Ethnographical Theater and the Institute of the Northern Tribes, where living Chukchi, Yukaghir, Buriat, Goldy, Samoyed, Lopar, Tungus, and representatives of many other Siberian tribes are gathered in Leningrad for study and for the promotion of education.

A very complete ethnographical map, illustrating the distribution of one hundred and sixty-nine ethnic groups in the territory of U.S.S.R., together with a number of publications on the subject were secured. The rich collections of the Hermitage Museum (Scythian gold, Sassanids, Siberian and Caucasian bronzes), of the Russian Museum (ethnography of U.S.S.R. and archaeology of Minusinsk and Altai regions), of the Museum of the Academy of Sciences (large collections of ethnographical material from all over the world and the most complete material on the Palaeolithic period in Russia) were studied and considerable data obtained.

All this material, the personal contacts with the leaders in the various branches of the field, and the arrangements made with the State Academy of the History of Material Culture for the forwarding of data in the future, will enable the University Museum to present to American scientists valuable and hitherto unavailable information. This, as well as assistance in establishing preliminary contacts, is at the disposal of anyone interested.

AMERICAN ETHNOLOGICAL SOCIETY

REPORT OF THE SECRETARY-TREASURER, 1931

During the past year meetings have been held as usual at the American Museum of Natural History on the fourth Monday of each month, in conjunction with the

Section of Anthropology and Psychology of the New York Academy of Sciences. The speakers have been as follows:

- February 23 Meeting omitted on account of holiday
 March 23. Tauhau and the Mwadare, by Geza Roheim
 April 27. Motion Picture Trails and Monasteries in Northern Tibet, by Gene Lamb
 October 20 A Summer's Field Work among the Papago Indians of Arizona, by Ruth Underhill
 November 23 Religion of the Dakota Indians, by Ella Deloria
 January 25 Motion Picture Indians of the Highlands of Guatemala, by Ruth Bunzel

The membership of the Society has increased during the past year, the total being at present 153, as over against 146 at the end of the last year (exclusive of the Central Section). This membership is made up of life members, members, and fellows, all of whom receive the publications of the Ethnological Society, the *American Anthropologist*, the Memoirs of the American Anthropological Association, and the weekly notification of meetings of the New York Academy of Sciences.

The publication of the Society for the present year was Gunther Wagner's *Yuchi Texts*, a publication financed through the efforts of Dr. Berthold Laufer. The thanks of the Society are due him for making it possible to continue the series at the present time. For the coming year, \$500 has been made available for publication from the funds of the National Academy of Sciences, to which the Society made application for funds in the control of their committee in charge of Grants in Aid of Research Publications. With this help, and with the balance on hand, it will be possible to begin the publication of Miss Ella Deloria's Dakota texts, which will appear during the present year.

The following ticket was elected for the year 1932:

- President—Clarence L. Hay, American Museum of Natural History
 1st Vice-President—Dr. Elsie Clews Parsons, Harrison, N. Y.
 2nd Vice-President—Dr. Bruno Oettinger, Columbia University
 Secretary-Treasurer—Carolyn Adler, Department of Anthropology, Columbia University
 Editor—Professor Franz Boas, Columbia University
 Directors—Dr. Clark Wissler, Dr. Gladys A. Reichard, Dr. Ruth Benedict

TREASURER'S REPORT

February 1, 1931–January 31, 1932

CURRENT FUND

Receipts

Balance in Current Fund, February 1, 1931		\$1676.13
Sales through Stechert, 1931	\$ 149 15	
Dues, Fellows, 1931	442.15	
Dues, Fellows, 1932	18 00	
Dues, Members, 1931	470 00	
Dues, Members, 1932	10.00	
Dues, Central Section	10 00	
Gifts to Publication Fund		
through efforts of Dr. Berthold Laufer	100 00	

through publicity drive	100 00	
anonymous	100 00	
Author's repayment on Memoir corrections	<u>25 00</u>	1424 30
		<u>3100 43</u>
<i>Expenditures</i>		
Dues to American Anthropological Assn	724 00	
Lecturer's expenses (Dec 1930)	10 00	
Publication of Memoirs XIII	1282 00	
Payment to agent for funds collected	35 00	
Postage, Secretary-Treasurer	10 00	
Assistance, Secretary-Treasurer	6 50	
Returned to permanent fund	<u>446 00</u>	2513 50
Balance in the Corn Exchange Bank		<u>586 93</u>
		<u>3100 43</u>

PERMANENT FUND

Statement of Assets and Liabilities

<i>Assets</i>		<i>Liabilities</i>	
3 N. Y. Mtg. Bond Co Bonds (par value)	\$3000 00		
Savings Account--Manhattan Savings Institution	<u>492 30</u>		
	3492 30	\$0,000 00	
NET ASSETS PERMANENT FUND			3,492 30

RUTH BENEDICT

*Secretary-Treasurer*REPORT OF THE ANTHROPOLOGICAL SOCIETY OF
WASHINGTON

The Anthropological Society of Washington at its annual meeting held on January 19, 1932, elected the following officers for the ensuing year.

President: J. N. B. Hewitt, Bureau of American Ethnology

Vice-president: Matthew W. Stirling, Bureau of American Ethnology

Secretary: Frank H. H. Roberts Jr., Bureau of American Ethnology

Treasurer: Henry B. Collins Jr., U. S. National Museum

Representative of the Anthropological Society to serve as one of vice-presidents of the Washington Academy of Sciences: N. M. Judd, U. S. National Museum

Additional Members of the Board of Managers: Biren Bonnerjea, Catholic University, George S. Duncan, American University, Herbert W. Krieger, U. S. National Museum; Frank M. Setzler, U. S. National Museum; William Duncan Strong, Bureau of American Ethnology.

The following is a report of the membership and activities of the Society since the last annual meeting, held January 20, 1931.

Life members	4
Active members	56
Associate members	6
Honorary members	23
Corresponding members	22
Total	<u>111</u>
Deceased during year	5
Associate	1
Active	3
Life	1
Resigned, active	1
New Members, active	2

The financial statement (Treasurer's report) is as follows:

Funds invested in Perpetual Building Association	\$1057 93
21 Shares Washington Sanitary Improvement Co., \$10 par	210 00
2 Shares Washington Sanitary Housing Co., \$100 par	200 00
Cash on hand	<u>245 75</u>
Total	\$1713 68
Bills payable	<u>5.80</u>
Net Balance	\$1707 88

Papers presented before regular meetings of the Society were as follows:

January 20, 1931. Two Small Pueblo Ruins in the Zuñi Region, by Frank H. H. Roberts Jr., archaeologist, Bureau of American Ethnology.

February 17, 1931. Archaeological Explorations on St. Lawrence Island, Alaska, by Henry B. Collins Jr., assistance curator of ethnology U. S. National Museum.

March 17, 1931. The Mound-Builder Cultures of the Upper Mississippi Valley, by Frank M. Setzler, assistant curator of archaeology, U. S. National Museum.

April 21, 1931. An Archaeological Reconnaissance of the Hawaiian Islands, by W. M. Walker, associate anthropologist, Bureau of American Ethnology.

October 20, 1931. Prehistoric Peoples of the Middle Missouri Valley, by Wm. Duncan Strong, ethnologist of the Bureau of American Ethnology.

November 17, 1931. The Cultural Background of the Present Situation in India, by Biren Bonnerjea, professor of Bengali and Hindustani, Foreign Mission School at Catholic University.

December 15, 1931. The Indians of the North Pacific Coast, by Edward Sapir, professor in anthropology, Yale University. This talk was the first in a series of five special lectures relating to the Indian tribes of western North America. The remaining four lectures were scheduled for the first part of 1932.

All of the meetings, with the exception of that held December 15, were in Room 42-43 of the New U. S. National Museum. The meeting of December 15th was held in the large auditorium of the same building. In accordance with the custom of several years' standing all of the meetings held in January, February, March and

April took place at 4:45 P.M. Beginning with the October meeting the time was changed to 8:00 P.M. The wisdom in this step was shown by the increase in attendance. Where the afternoon meetings had an average of 25, the evening gatherings passed the 50 mark. The special lecture by Dr. Sapir had an attendance of 160.

The Society was unfortunate in its loss by death of five members. Dr. George A. Dorsey, associate member, died March 29, 1931. Mr. Victor J. Evans, an active member, died February 1, 1931. Dr. George M. Kober, life member, died on April 24, 1931. Mrs. Louise Simpson, active member, died in March 1931. Dr. Herman F. C. ten Kate, active member, died February 4, 1931.

FRANK H. H. ROBERTS JR.
Secretary

BOOK REVIEWS

METHODS AND PRINCIPLES

Notes and Queries on Anthropology. Fifth Edition. Edited for the British Association for the Advancement of Science by a Committee of Section H. (xvii, 404 pp., 6 s. London: Royal Anthropological Institute, 1929.)

This is an excellent handbook for the ethnographer no matter how sophisticated he may be. It is full of suggestive points of inquiry, but is far less successful on methods of attack.

In this, the fifth edition, the material of earlier issues has been entirely recast. Especially is this true of the long sections on social anthropology, now made to include discussions of magic and religion. Less revision appears in those on material culture, according to the preface. Each topic, after a succinct presentation of its commonly occurring forms, becomes the focus for a series of skilful suggestions, points of inquiry rather than a catalogue of leading questions.

Even experienced ethnographers would do well to give the handbook at least a cursory scrutiny. They may well be reminded of the surprisingly wide range of topics which, alas, many of them habitually avoid. If the avoidance be due to a lack of precise knowledge of technical points, say of features of technology, the excuse no longer holds, for the collaborators to this volume have succeeded in presenting the essentials of technological processes in admirably intelligible form. We recommend as examples the sections on weaving, basketry, and designs. On the other hand, that on musical instruments, no matter how fine a logical classification it may be, seems nearly useless to the field man.

The book was gotten up primarily as a guide for laymen in the British colonies. This is manifest in the observations on methods of dealing with informants and in the lines of inquiry suggested. Undoubtedly they fit conditions and cultures in Africa, southern Asia, and Oceania, but there is a very real question how far the suggestions taken literally would help with an American tribe.

This raises the question whether there can be any adequate substitute for complete saturation with the cultures bordering on the people under investigation as suggesting what is to be inquired for. A recent experience in directing the field activities of a group of young people, willing and intelligent enough, demonstrated that their inability to elicit the details of native culture, or at least to do so with precision and speed, was due to their lack of specific knowledge of cultures in the surrounding area. A knowledge of what might be expected in any portion of the cultural landscape is an inescapable prerequisite for which a questionnaire is no more than a mechanical substitute. It would not be fair to leave the impression that this handbook is mechanical, quite the contrary. But it would have been wise to stress the possibilities of interpolation from surrounding related cultures.

LESLIE SPIER

Die menschliche Gesellschaft in ihren ethno-soziologischen Grundlagen RICHARD THURNWALD. *Erster Band: Repräsentative Lebensbilder von Naturvölkern.* xxiii, 311 pp. Berlin und Leipzig: Walter De Gruyter & Co., 1931.)

This is the first volume of an announced five-volume work by the author which will deal with cultural anthropology from the ethno-sociological angle. The first volume deals with life and activity representative of certain chosen economic stages; the second volume will treat of the family, the third of economic activities, the fourth of forms of social and political life, the fifth of law.

A thirty-two page introduction reviews the fundamental problems of the ethnological approach. We know no more incisive, balanced, and convincing discussion than that of Dr. Thurnwald in these pages. He disposes of the contentions of the "historical" and the "culture complex" schools with a thoroughness that will be difficult to counter, if, indeed, there is any reply to his arguments. He shows that the much bruited "historical" reconstructions are non-historical, and that the devices so far suggested do not enable the ethnologist to reconstruct the past from a knowledge of the present.

The author divides his material into the topics of hunters and fishers, agriculturists, and the domesticators of animals—the keepers of cattle, camels, and sheep. The first-mentioned class includes such groups as the Eskimo, North Siberian tribes, and Bushman; the second includes many African tribes and the agriculturists of Oceania; the third includes the cattle-raising peoples of Africa and the herdsmen of Central Asia.

The material is well ordered and the descriptions are apt and clear-cut. There is an ample and well chosen bibliographical list. If the subsequent volumes maintain the high standard set by the first volume, Dr. Thurnwald will be credited with one of the best surveys ever made of the ethnographical field.

WILSON D. WALLIS

Entstehung und Verbreitung des Pfluges. PAUL LESER. (Anthropos-Bibliothek, hrsg. v. PP. WILHELM SCHMIDT u. WILHELM KOPFFERS, S. V. D., Bd. III, 3. Heft 676 pp., 22 plates, 351 text figs. RM. 36.80. Münster i. W.: Aschendorfsche Buchhandlung, 1931).

Paul Leser is of the school of F. Graebner, and in the foreword to his book presents the work modestly as a contribution to his master's unfinished investigation of the stratigraphy and history of the Eurasiatic *Hochkultur*. The modesty redounds to the author's credit; the reader will judge the book, *Stückwerk* though its author calls it, as the outstanding contribution to aurography of this generation, impressive in its critical sifting and strict scientific discussion of an almost overwhelming mass of material.

Method and material are introduced by chapters on the parts and operation of the plow, and on the history of aurographic investigation. The latter chapter provides a welcome opportunity for the exercise of the author's critical acumen. Of the numerous older writers whose works are put through his fine intellectual sieves, Richard Braungart (*Die Ackerbaugeräte* . . ., 1881; *Die Urheimat der Landwirt-*

schaft, 1912) is subjected to the most devastating adverse criticism, a criticism abundantly supported in detail throughout the first part of the book. Henri Chevalier (various papers, 1890-1920) is praised as having done the best work to date, in the collection of data from all parts of the world in which plows are used.

The *corpus* of the book is divided into two parts: the first and larger, comprising nearly four hundred pages, reviews the plows of the individual lands; the second part, which bears the title "Investigations of the history of the plow," occupies less than one hundred pages. This complete separation of material and conclusions is motivated (p. 47, fn. 145) by the citation of two highly praiseworthy reasons: in order (1) that the material presented may be more easily accessible to other investigators, and (2) that the reader may form for himself judgments concerning the history of the plow, and thus test the author's conclusions.

The material presented in the first part is naturally drawn from many sources. First, and comprising a good part of the material from Germany, which land is treated in most detail, is the fruit of the author's own observations, in the field where possible, and in museums; museums are relied upon for the first-hand information gathered from neighboring countries. For the greater part of the plow-using world the author is of course compelled to use literary sources. Meticulous criticism is applied to the last-mentioned, least dependable, evidence. Future investigators will supplement Leser's work by the addition of new material; they will find little to discard in that admitted by him.

The fundamental problem in the construction of the plow, namely the application of a tractive force to a working part operating in a lower horizontal plane, may be solved in various, apparently equally satisfactory, ways: typologic differences in the frame of the implement are therefore significant. The most important types recognized on this basis, to each of which a chapter in the "Investigations" is devoted, are (1) the "four-sided plow"—i.e., having a frame of four parts, the lower horizontal member of which forms the plow sole, the upper the beam—and (2) the plow in which the vertical offset from beam to sole (or to the plane of the share when a sole is lacking) is gained by a downward curve in the rear portion of the beam (*Pflug mit Krumel*). The wide dispersal of the four-sided plow is older than that of the *Pflug mit Krümel*; it has two principal areas of distribution, namely in northwestern Europe and in the Far East. Ancient connections between these widely separated areas are indicated by the distribution of other agricultural implements. The *Pflug mit Krumel* is interpreted as having originated in the Mediterranean region, and to have owed its dispersion thence, northward and eastward, to Roman influence. It is, however, older than the time of Roman dominance in the Mediterranean, having formed part of the cultures of the Etruscans and of the Babylonians.

Nothing final can be said concerning the respective ages of the two plow forms. All that is certain, it seems to me, is that both are very old. In view of the very wide distribution of both forms, it is not improbable that both are older than the oldest definite evidence we possess (p. 526).

The author presents, in discussing the curved moldboard (chapter 2 of part 2),

the thesis he had already developed at greater length in his *Westöstliche Landwirtschaft* (Festschrift P. W. Schmidt, 1928, pp. 416-484), namely that this form of moldboard, which has so largely replaced the earlier plane moldboard in the Occident, was introduced into Europe from eastern Asia at about the beginning of the eighteenth century. Circumstantially, he makes out a very good case for the thesis, in view of the large amount of agricultural literature that saw the light in the eighteenth century, it seems to the reviewer that documentary evidence should exist. The willingness of the West to learn from China in matters agricultural in that century is abundantly attested.

On the question of the origin of the plow, the author firmly rejects E. Hahn's hypothesis of the original function of the implement as a phallic symbol, while rendering due credit to Hahn's distinction between plow culture and other forms of tillage. The prototype of the plow among simpler implements, according to Leser, was not the hoe, but the spade. Spades, or spade-like implements, with attached cords for drawing by a person, are cited from various parts of Asia, in the best-developed form from Korea. A plow from Japan, possessing neither beam nor eveners, is presented as bridging the gap between "draw-spade" and the common form of the plow. The chain of evidence given is impressive, and constructed solely of considerations of morphology and distribution. The plow was invented but once, and has diffused from the uncertain locality of that unique invention.

It should not be judged from the above that the author has proceeded by the shortest route to his conclusions. These are presented at the end of the volume, and with engaging modesty. In the summary, "every limiting 'perhaps' and 'possibly' is omitted, which words would in fact have to be added to every sentence." The reader is specifically advised that what is presented in the summary is "not facts but hypotheses, whose correctness the reader may judge on the basis of the material presented."

The assembly of material in the first part of the book, while very large, is in the nature of things by no means exhaustive. Later investigators can place complete confidence in that which Leser has admitted, but will wish to add to his compilation. The reviewer takes the liberty of enumerating a few sources of further data from Baltic Europe:

With regard to north Europe, the most important omission from the bibliography, excepting possibly Bielenstein's *Holzbauten und Holzgerate der Letten*, listed but marked as not used, is Gesta Grotenfelt, *Det primitiva jordbrukets metoder i Finland under den historiska tiden* (Helsingfors, 1899). In this work the inquirer will find as much as could be desired on the plows of Finland. Several plows from the vicinity of Åbo are illustrated, though not so clearly as might be desired, in Gabriel Nikander (ed.), *Det svenska Finland*, v. 2, pt. 1 (Stockholm, 1923), p. 14.

A good description, with illustration, of the plow used on Runo, in the Gulf of Riga, is given in Ernst Klein, *Runo, folklivet i ett gammalsvenskt samhälle* (Uppsala, 1924), pp. 297-298, figs. 140, 141. This source is much better, for the Swedish folk-remnant inhabiting the islands of the east Baltic, than Rhamm, whose material from Nucko Leser uses.

Contemporary data for the eighteenth century are scattered through the writings of the Linnéan group. Linné himself gives illustrations and descriptions of south Swedish plows in his *Skånska resa* p. 258 of the edition of 1750, and of both north Swedish and Finnish plows in *Iter Lapponicum* (Carl von Linné's ungdomsskrifter . . . utgifna af K. Vetenskaps-Akad., ser. 2 (Stockholm, [1888²]), pp. 26, 178, 194.

JOHN B. LEECH

The Devil in Legend and Literature. MAXIMILIAN RUDWIN. (XVI, 354 pp. Chicago: Open Court Publishing Co. 1931.)

Dr. Rudwin has written half a dozen earlier "devil studies" in the past twenty years. All deal especially with the use made of the devil in French and German literature. The present volume is primarily a study of the literature of England, France and Germany. But the first three chapters deal with the origin of the Lucifer legend, and the number and names of the devils. Thus Dr. Rudwin proposes a definitely anthropological study. And in the realm of origins every anthropologist and every historian of religions knows that we cannot anywhere point certainly to an original unmixed race, or liturgy, or cult, or creed. So while Dr. Rudwin recognizes that in prechristian times ideas from Palestine, Babylonia, Persia and Egypt were blending to survive in the "devil" of the European Dark and Middle Ages, yet each of those earlier stages was already highly complex or composite. The "Ur-Devil" (to Germanize) is nowhere known to us, and never will be. Many scholars who study especially the prechristian world may complain that more time should have been spent in separating the above strands into their individual threads. No finality in that respect is at present possible.

On the other hand the immense body of material collected from relatively modern European sources has large anthropological value. We are really shown how an olden humanity incessantly blended and rearranged and borrowed ideas that seemed to make the unseen world a little more intelligible. In this incessant effort men cannot agree as to what is evil and what is good. There are millions of modern Americans who think the destruction wrought by cyclone, earthquake, or volcano to be the work of an evil personality; others count such the work of vindictive Goodness (!) hurled at evil men. An old negro, lamenting the destruction of all of his crop by frost was told, "This is the work of Providence, Pompey, and we must consider it meant for our good!" "Dat's just de trouble, massa! Sometimes I think dis yer Providence does mo' harm than good, sah!" Dr. Rudwin's collections form a valuable contribution to the history of such perplexities of the groping mind.

ALLEN H. GODFREY

Man's Own Show: Civilization. GEORGE A. DORSEY. (977 pp. \$5.00. New York: Harper Bros.)

This book, which was completed just before Dr. Dorsey's death, attempts to explain man and his civilization as though the author was neither human nor civilized, but curious about everything.

The first section deals with origins. The beginnings of man are followed from *Dryopithecus* of Miocene times through the various fossil finds up to the modern races. Social usages and institutions are traced through animal behavior and the customs of the more primitive peoples. It is language, he finds, which has made possible social systems.

Religion is a phase of culture which has played a powerful role in civilization and which today sanctions the actions of hundreds of millions of human beings. Dorsey is so eager to show that religion is man-made, that he loses, for a time, the complete objectivity for which he is striving and takes issue with all who may hold counter-views. Thus he finds himself at odds with the Pope, Plato, Billy Sunday, Compton, Millikan, and Mary Baker Eddy.

His review of civilization from the early developments along the Nile and the Euphrates, through Cretan, Greek and Roman times is beautifully written and is in many respects the best part of the volume. Greece fares rather well in the story for

the energy the Jews spent in theology the Greeks spent in philosophy (which began as science) or in art (which demanded science).

Rome on the other hand fares badly at Dorsey's hands, but his chief fire is reserved for Christianity. This religion he claims has tended to hold civilization static from the time it became entrenched as the state religion of Rome. Here he recites the stories of the Inquisition and the repressive measures of the Church toward most scientific discoveries.

The hope for the future lies in Science which has as its objective "the transformation of human society."

It alone is the measure of progress, alone seeks the light and eternally wars on darkness and the supernatural.

The growth of the physical and biological sciences is traced with a rush of facts. He digresses, and brings to bear on his topic materials gathered during his own long experience as a field worker in science. The terseness which characterized his *Nature of Man* is entirely lacking in this volume, yet one feels that he has but touched upon an inexhaustible fund of information.

Despite all repressive measures created by man, we have developed a great civilization, so great that

we who are in the midst of it can hardly realize how great it is—so new is it, so rapidly does it change and advance before our eyes and under our very feet.

It is not expected that anyone will agree with all of Dr. Dorsey's statements and conclusions. Many will disagree with most of his major premises, but the open-minded student will find here a vast fund of information, and a challenge to take stock of himself.

FAY-COOPER COLE

AFRICA

The Bavenda. HUGH A. STAYT With an introduction by Mrs. A. W. HOERNLE. (XII. 392 pp., illustrations, map. Published for the International Institute of African Languages and Cultures by Oxford University Press, 1931.)

The International Institute of African Languages and Cultures is to be congratulated on the publication of a volume that adds greatly to our knowledge of Africa. The author, who was born in South Africa, was blinded in the Great War; he studied anthropology at Cambridge and at Cape Town, and then with amazing courage took up field work. He returned with his wife to the country in which he had been brought up, and was there greeted by the natives as an old friend, a fact which contributes greatly to the wealth and reliability of his material. His book contains little theoretical discussion, but an excellent cultural picture is drawn of a highly organized Bantu people based on a clear description of all the more important activities.

The Bavenda are a mixed people, welded by a strong political organization into a nation speaking a single language. Mrs. Hoernle, who writes an introduction, regards the Bavenda as the most recent arrivals from the north in the Union of South Africa. Tradition traces their migration from a country north of the Limpopo; the Mashona god of the firmament, Mwari (called Ralunhimba by the Bavenda), is regarded as the "grandfather" of the chief, a yearly emissary being sent to him for rain to the Matopo Hills, some 200 miles to the north. Nevertheless, cultural influences from the south have profoundly influenced the people, for instance, circumcision was introduced only at about the beginning of this century with conscious political intent, much of the ritual being borrowed from the Basuto. Mr. Stayt considers, however, that it was the Balemba who introduced the custom to the Bavenda, and Junod also traces its introduction at an earlier date among the Bathonga to this source. Social and political pressure is tending to spread the custom, but, in spite of seclusion in the lodges accompanied by secret ritual, it is not an initiation ceremony, nor is it regarded as a necessary antecedent to marriage. Circumcision may be performed singly or in groups, and at any age; indeed grown men are frequently seized and forcibly circumcised. The attendance at the same lodges with the Bavenda of Basuto, Ba-Pedi, Ba-Thonga, and Balemba, is a powerful agent in cementing intertribal bonds.

The spread of circumcision is weakening the attendance at the indigenous *thondo* schools. These latter were perhaps originally aristocratic institutions, but now should be attended by all the boys of the tribe from 7 to 8 years of age up to puberty. The training is mainly military, but includes a complete education, with some crafts, dancing, and instruction in etiquette. The schools are in charge of a councilor, and are visited regularly by the chief. On reaching puberty a boy goes through ordeals in the "washing away of boyhood" ceremony. He emerges a responsible tribesman, member of an age set, ready in the old days for military service, now frequently to perform labor for his chief. Girls also go through training and initiation. In these customs, as in many other of the beliefs and practices of this people,

distinctive characteristics are displayed of an extremely logical and practical nature. The final phase of education of the Bavenda youth is of a quite unusual type: both sexes attend a *domba* school, where instruction is given in all that concerns marriage and childbirth. Symbolic plays are enacted, and the initiates execute the python dance throughout the whole of the last night without stopping. In the morning a ceremonial coitus is enacted under a blanket by a chosen pair of initiates, then a final ordeal is endured, and the initiates rush to the river to soothe their agony of irritation. Anyone dying before the completion of these ceremonies is buried without rites, the spirit being impotent for good or evil.

The social organization of the people is described and analysed by Mr. Stayt with great care and insight, so that Bavenda custom can be seen against a background of cultural and religious belief. Thus, the attitude towards cattle, the marriage laws, the ritual behavior in the presence of disease and death, all hang upon the division into lineages, and to the Muvenda rest logically upon his physiological beliefs. In common with all Africans, ancestor cult is the important working religion of the people; the child inherits his bone from his father and his blood from his mother, and—since diseases of the bone are rare—illness (when not brought about by witchcraft) is due to disturbance in the blood or flesh, hence the enormous importance of the mother and of her ancestors in the female line. The extended family in the father's line is the basis of social organization, descent, inheritance, and succession are patrilineal, and marriage with both types of ortho-cousin is forbidden, yet the mother's lineage is always recognized and is probably more important from the religious point of view than the father's, the reason being that the spirits in the mother's line can protect descendants from the machinations of witches. Possession by ancestral spirits, often by those of very remote ancestors, is now tolerably common, but the author states that this belief was rare before 1914 and has been introduced from Southern Rhodesia. Among the Bathonga possession by spirits is also said to be introduced, but the spirits that possess the Thonga are Angoni, not ancestral. It is a pity that Mr. Stayt has not given his evidence for the introduction among the Bavenda of spirit possession.

As among the Basuto and some Nilotes, a barren widow may raise up offspring to the dead by "marrying" another woman, and the physiological father of the children is of no social importance, but since an unmarried man cannot leave a spirit potent to harm his relatives it is not necessary to provide a wife and children for a dead brother, as among the Dinka. The Bavenda, however, carry the practice of women "marrying" women to a degree unknown among the Nilotes, for any woman of property (and in the matter of owning property women have fuller rights among the Bavenda than probably among any other Bantu people) may by the proper payment of *lobola* marry any number of women, who become her servants, whose children belong to her and address her as "father."

The position of Great Wife and Queen Mother is of great importance throughout Bantu Africa; here we wish Mr. Stayt had been more explicit, for in this as in so many other matters the Bavenda have their distinctive customs. The paramount chief is supported in his duties by a specially appointed brother and sister, whose

main function during his lifetime is to appoint the heir and a brother and sister to replace themselves. The sister of the former chief becomes the *makhudzi* (father's sister) of the reigning chief, and it is she who is the woman of first importance and to whom royal honors are paid. Of all the women in the royal family the marriage of the *makhudzi* alone is restricted; she must either marry into the royal blood (i.e. contract a union within forbidden degrees), or marry a foreign chief. For political reasons the latter type of marriage is encouraged. The paramount chief, however, must marry at least one wife within forbidden degrees, for the heir must be a member "of his own royal family."

As well as belonging to the royal family, the woman who is to be the mother of the next chief must have been given to the reigning chief by his father and labored with the royal cattle.

Sometimes a chief's wife is addressed—as *or'v'v'v'v'* (father's sister)—adding another source of confusion to the difficulties that already exist in attempting to differentiate the various people called by this term. It possibly it used to be a marriage injunction for the chief's sister to be his great wife.

Thus we do not know whether incestuous unions are allowed to all members of the royal family, as among the Bunyoro and Banyankole, or only enforced for the sake of producing pure-blooded heirs. It would be interesting to know whether incest is permitted in the families of petty chiefs.

The restricted type of cross-cousin marriage prevalent among the Bavenda seems undoubtedly connected with the right of a man to his wife's brother's daughter, who is however usually taken by his son. Either type of marriage—but naturally not both—is allowed, but the cross-cousin type is more common. The opposite type of cross-cousin marriage—that with the father's sister's daughter—by an unfortunate slip stated as "son's" is rare and usually regarded as wrong. It would be interesting to know the reason for the feeling against this marriage. Is it merely disliked because a girl is really pledged to her father's sister's husband or to his son, and so her mother's brother's son has no right to her, or does a man feel that there is a barrier of an incestuous nature between himself and his father's sister's daughter, which does not exist between himself and his mother's brother's daughter?

The publication of Mr. Stoyt's volume was assisted by a grant from the Rivers Memorial Fund. I believe the first work to be assisted by the fund; it is then particularly gratifying to find the kinship system and the functions of relatives, to which Rivers attached so much theoretic importance, treated with understanding. It was the impetus given by Rivers in this country to the study of kinship that has caused a great advance in our knowledge of social organization, even though we have drawn away from many of his conclusions.

BRENDA Z. SELIGMAN

The Khasian Peoples of South Africa, Bushmen and Hottentots. I. SCHAPIRA. 25 s.
London: George Routledge & Sons, Ltd., 1930.

This book is the first in a series of eight volumes entitled *The Ethnology of Africa*. Under the editorship of the author of the work under review and Mr. J. H.

Driberg, it is planned to have this series give a general picture of the ethnology of that continent. Certainly Africa is a region for which general works are badly needed. In recent years, there have appeared a great number of books of varying degrees of excellence, dealing with single tribes or the peoples of very restricted areas. The vast number of cultures in Africa, however, makes it almost impossible to draw any large view from these specialized works which are, in addition, too often ethnologically unimportant. One can heartily concur in the statement of the editors that

all this information needs to be sifted and correlated before it will be possible to arrive at a correct appreciation of the data and problems of African ethnology

This first volume sets a high standard for the series as a whole. Dr. Schapera, in his presentation of the life of the Bushmen and Hottentots, has ranged far and wide through the literature on these two peoples. The bibliography, which comprises almost seven pages of titles in small type, shows how much interest has been manifested in these two groups which represent, it is true, some of the ethnological curiosities of mankind. In going through this list, one is impressed by the amount of careful research carried on in recent years by the South Africans themselves as indicated even in their restricted field by the titles after the names of Miss Bleek, C. M. Doke, S. S. Dornan, H. J. H. Goodwin, Mrs. Hoernle, and, among others, Dr. Schapera himself. However, Dr. Schapera does not confine himself to modern investigations, but draws with telling effect on the accounts of the early travellers, who knew these people before their civilizations had become as pathetically broken, through contact with European cultures, as they are today.

The title of the book takes its name from a term recently employed by Schultze to designate at one time both Bushmen and Hottentots. "Khoisan," we are informed, is compounded of the names Khoi-Khoi, the name by which the Hottentots call themselves, and San, used by the Hottentots to designate the Bushmen, who give themselves no collective name. It is a useful term, particularly in view of the thesis which Dr. Schapera supports here and has presented in earlier papers, that the Hottentots and Bushmen represent branches of a single stock.

The volume is divided into four parts, the first dealing with the ethno-geography of the Khoisan region, the second with the Bushmen culture, the third with the culture of the Hottentots and the fourth with the Khoisan languages. For the ethnological problems of South Africa, the first part is the most significant, while the second and third parts give the ethnographer a compact picture of the two cultures.

In opening his discussion of the racial history of the Hottentots, Dr. Schapera makes his first comparison between the two groups he is considering. Bushmen and Hottentots are, he says,

unquestionably allied in race, and, indeed, in appearance and bodily characteristics resemble each other so closely as to have often been confused. There are certain features, such as stature and shape of the head, in which the Hottentots are actually found to differ somewhat

from the Cape Bushmen, but differences of the same nature exist even between the Northern Bushmen and those of the Cape

He also finds similarities in their languages:

Their speech has the same phonetic basis . . . ; many roots in the Hottentot languages are found with the same meanings in various Bushman languages, while in grammatical processes and categories there is also a fundamental correspondence . . . (p. 41).

In culture, we are told, the differences between the two peoples are more apparent. The Bushmen are hunters and food-gatherers, the Hottentots are also herders. The latter work iron, which the Bushmen have never learned to do. The Bushmen, on the other hand, have a graphic art that stands out as one of the achievements of mankind, while the Hottentots have no art at all, to speak of. The details of social organization and religion, as well as the mythological abstracts which are given, display certain basic similarities between the two peoples, though it is not strange that since culture is more susceptible to change than physical form or language, differences between the two folk should be most apparent in their cultural life.

Of the moot question of the origin of these two stocks Dr. Schapera gives a clear analysis. He comes to the conclusion that

The evidence seems to indicate that at a very early time the Bushmen occupied the hunting grounds of tropical East Africa, perhaps even to the confines of Abyssinia. That they are no longer to be found in this region may be ascribed to its extensive invasion by later Hamitic and Negro peoples. Harried by the encroachment of these more powerful races, the Bushmen, where they were not exterminated or absorbed, must gradually have passed southwards, keeping along the more open grasslands of the eastern mountainous zone . . . until, when the written history of South Africa commences, they were roaming all over the territory south of the Zambesi River (p. 28).

Of the Hottentots he feels that

The most plausible theory of the racial origin of the Hottentots may therefore be that they have sprung out of a mixture of the old Bushman population of East Africa with an early immigration there of Hamites, who gave them their cattle and those peculiarities of language by which they are distinguished from the modern Bushmen (p. 43).

In discussions of the linguistic affiliations of Hottentot, it has been claimed that the Hottentot languages have been derived from the Hamitic tongues of North-eastern Africa. Though this hypothesis has been far from universally accepted, Dr. Schapera informs us that the Hottentot languages have generally been looked upon as essentially Hamitic tongues, modified by the incorporation of Bushman phonetic elements and words. He says, however, that

It has recently been demonstrated, . . . that fundamentally, they have far more in common with the Bushman than with the Hamitic languages. They must accordingly be included with the former in the same language family, of which they constitute a fourth distinct group (p. 419).

It is impossible to do more here than outline the manner in which Dr. Schapera

takes up the culture of the two peoples whom he studies in this book, in spite of the fact that this consideration occupies the major portion of the volume. For each he takes up their social organization, their social habits and customs, economic and political life, religion and magic, and finally, their art and what he terms "knowledge"—that is, knowledge of medicine, of the stars, of the seasons, of numbers. Since the work is a compilation and not the report of a field investigation, the description is punctuated with statements of problems that are in need of further investigation. This is particularly the case in those aspects of culture where attitudes of the people are involved, and holds especially for those phases of the cultures destroyed by European influence, for information regarding which the author is forced to rely on the more or less casual reports of early travellers.

In a sense this work is a stock-taking of present knowledge of the Khoisan peoples, a critical assessing and summarizing of what has been published regarding them, and as such it is by far the most satisfactory general work on these peoples that exists. It is a valuable contribution to African ethnology, and after reading it, one looks forward to the future volumes of this series.

MELVILLE J. HERSKOVITS

THE AMERICAN NEGRO

The Anthropometry of the American Negro. Columbia University Contributions to Anthropology No. XI. MELVILLE J. HERSKOVITS. (\$4.00 New York: Columbia University Press, 1930)

In the diary of his second visit to the United States Sir Charles Lyell wrote, under date of February 8, 1846, a glowing forecast of what the future would hold for the Negro people of America, for he had

the most sanguine hopes of their future improvement and emancipation, and even their ultimate amalgamation and fusion with the Whites.

It is easy at this time to see how Lyell's mind was dominated by a zoological attitude. Huxley, indeed, tried to apply the same zoological method to the study of Man in 1871. Both thought in terms of mongrel breeds. It never occurred to Huxley, and even less to Lyell, as Keith has recently pointed out, that there still remain deeply implanted in Man's nature those "instincts" which are concerned in race building.

Dr. Herskovits' new book is a study of the physical characters of a people in the light of this newer understanding. It is an endeavor to depict the present, with knowledge of the past and wisdom for the future. And for this reason it will meet with adverse criticism and disparagement from those whose prejudices and assumptions rob their minds of clear judgment. But it is a book which will, after these attacks prompted by fear and misconception have died away, become not merely a source of reliable information upon the physical status of the American Negro today, but a guide to those who would investigate the process of human evolution in its most practical aspect, namely that of international or inter-racial relationships.

It is true that Dr. Herskovits confines his attention to physical traits alone, but it is also abundantly clear that his analysis is made and his conclusions drawn with a thorough first-hand understanding of the social and economic factors which influence, directly and indirectly, the bodily conformation of a people.

While anthropologists in general have refrained from expressing inferences upon the physical build of the American Negro on the basis that we have not yet an adequate sample of true African Negroes with which to make comparison, Herskovits has recognized the impossibility of attaining that visionary ideal and has analyzed his data in contrast and comparison with the scattered information upon West African peoples set forth in literature and gathered by himself with assiduous zeal. This is boldness, not temerity. It is the application of scientific method to data imperfect in many ways, but nevertheless as representative as any we are likely to possess in the future, since the transportation facilities of modern times render ever less probable the accumulation of records upon an African sample which, for centuries past already, can have been "pure" only in the untutored imagination of theorists.

Dr. Herskovits obviously would not claim this book as the last word on the physical anthropometry of the American Negro, but he would be justified in holding that, having set down unequivocally an evaluation of knowledge on the subject as it exists, largely through his own efforts, today, we now have a basis upon which further and even more penetrating investigations can be made. He has given us an excellent example of methodology. He has demonstrated the possibility of a new and constructive attack on the problems of anthropometry. And he has done that which every leader of thought hopes to do, namely, laid the foundation for still more elaborate and satisfying contributions to human knowledge.

T. WINGATE TODD

Negro Year Book, An Annual Encyclopedia of the Negro, 1931-1932, edited by
MONROE N. WORK. (\$2.00 Negro Year Book Publishing Co., Tuskegee Institute, Alabama.)

This is the eighth edition of a work that has come to be a standard reference on the Negro. It is edited, as were the earlier editions, by Monroe N. Work, and again attempts a full portrayal of the Negro's position, not only in the United States, but in the world as a whole. This edition appears in improved format and binding. It will stand rougher usage than the earlier paper-bound issues, and the clearer typography makes it easier to read.

The volume is divided into eight parts, the first of which deals with the Negro in the United States. Interracial co-operation, the manifestations of racial consciousness on the part of the Negro and discriminations against the Negro of a social and political character, are first considered. This is followed by a discussion of the "racial integrity" movement, one which has been developed by Whites who feel that White stock must be kept free from Negro blood at any cost. Here, as elsewhere, the book holds a double value for the student of culture, for a definite point

of view goes with the presentation of facts. There is no attempt made to conceal this approach to the data. Considering the position of the Negro in the United States and his disabilities, this is perfectly understandable, and since, to my knowledge, the point of view is not allowed to affect the statistical presentation of fact, it is quite justifiable.

One point of interest is the resentment of the Negro against the use of the term "Negress" to mean a Negro woman, which has reached a point where Mr. Work deems it worth some discussion. I quote the following (p. 19):

The word Negress is obnoxious more than it is insulting to colored people. There is really no ethnological or other reason for its usage. In the brute world we speak of "lion" and "lioness," "tiger" and "tigress," etc.—but assuredly colored women are not of the brute world.

Though we also speak of actor and actress, prince and princess, poet and poetess, Jew and Jewess, laundryman and laundress, that fact need not deter the ethnologist from drawing his lesson as to the manner in which a folk-idea may gain sufficient strength so that it finds a place in a work of the caliber of this one. Similarly interesting is the rather long section where the capitalization of the "N" in Negro is discussed. This insistence, perhaps, has somewhat more justification than that regarding the abolition of the word "Negress" and one reads with pleasure the long list of newspapers in both North and South, of journals—in which the *American Anthropologist* is listed as one—and of publishers, in whose style-book the word is spelled with a capital.

The remainder of the first section recounts the achievements of the Negro in agriculture, business, labor, invention, sport, scholarship, education and religious affairs. It is an interesting example of acculturation that the section headed "Scholastic and Other Distinctions" follows immediately after the one headed "Sports." There is a section on the criminality of the Negro and one on lynching, there are mortality statistics, a discussion of slavery, of what Negroes have achieved in the army, and finally a useful abstract of census figures on the Negro, in which are included results of the 1930 census.

The section on Negro slavery is little changed from what was given in earlier editions and the change, if anything, is for the worse. This, in large part, is due to the substitution for the older data of a discussion of the doctrines of Professor Leo Wiener. The editor, who apparently accepts these theories, states that Wiener has set forth . . . in a critical study . . . the proposition . . . that Negroes from Africa had migrated to the American continent long before the first voyage of Columbus.

Those acquainted with Wiener's conclusions, which are not accepted by either Africanists or Americanists, will recognize the following (p. 305):

He adduces facts to show that many of the practices, rites, ceremonies and words of the aborigines of the West Indian Archipelago came from Africa. He further points out that a number of supposedly Indian words are in reality of African origin, as for example, canoe and the appellations for the sweet potato and yam. Tobacco and its smoking, he brings evidence to show, were introduced into America by Africans, who in his opinion, long before the time of Columbus had crossed over to America from Guinea.

It is extremely unfortunate that Mr. Work should not be sufficiently acquainted with the numerous criticisms leveled against Professor Wiener's hypothesis, so as at least to indicate in the *Year Book* that the position taken is not one generally accepted by competent scholars.

Part Two considers the Negro in Latin America, and in this part the section on Haiti, with the recommendations of the commission for the study of conditions there, and those of the commission on education in Haiti, will be found useful. There is a section on the Negro in Europe, with a discussion of the growth of color prejudice, and a fourth section on the Negro in Africa, which is far below the standard set by the first part of the book. Part Five deals with the Negro in poetry and the fine arts, and the sixth part with literature on the Negro. It has for its sub-title, "A Review of Books on or Relating to the Negro, published 1925-1930." In this section again, the present edition of the *Year Book* is incomparably less valuable than were earlier editions. No attention at all is given to contributions relating to the Negro which appeared in periodical literature, in spite of the fact that a bibliography of such articles would be much more useful than a repetition of titles five and six years old, some of which have little, if anything, to do with the Negro, and which merely describe primitive peoples who are not even Negroid.

The *Year Book* is still useful, though not up to the standard set by its predecessors. It is to be hoped that in the next issue the gains in substantial binding and clear typography will be maintained, and that the editor will make an effort to bring the reading matter up to the level attained in earlier editions.

MELVILLE J. HERSKOVITS

NORTH AMERICA

Archeological Collections From the Western Eskimos. THERKEF MATHIASSEN. (Reports of the Fifth Thule Expedition Vol. 10, No. 1, 98 pp., 22 plates, 19 figures. Copenhagen: Gyldendalske Boghandel, Nordisk Forlag, 1930.)

In the present paper Mathiasen describes the archaeological collections gathered by Knud Rasmussen on his trip through the territory of the Western Eskimo in 1924. Since these collections were for the most part secured either by Eskimo or local white traders they are accompanied by very little data beyond that of general provenience. Hence from the nature of the material the value of the present work would seem to lie in its descriptive rather than its theoretical content.

Five main collections are considered,—one of 670 artifacts from Point Atkinson (a little to the east of the Mackenzie river); one of 998 artifacts from Barter island (just west of the Mackenzie river delta); one of 537 artifacts from Point Barrow; one of 836 artifacts from Point Hope; and, lastly, one of 168 artifacts from East cape, Siberia. As in the previous papers of this series, the illustrations of the specimens are excellent. With the exception of the material from Barter island, all the collections appear to be very heterogeneous and in many cases are quite recent.

The Barter island collection, however, appears to the author as representing a definite time period considerably later than the time of the Thule Culture and prior

to the advent of Europeans. On the basis of typology Mathiasen divides the material from Point Barrow into three groups: first, those types pertaining to the Thule Culture; second, those unknown to the Thule Culture but in present day use among the Central Eskimo, and third, those types known solely from the territory of the Western Eskimo. The author argues with reason that the second group types are in the main later than the Thule Culture types in the central regions. However, when he also concludes on the basis of restricted distribution and observed modern use that all the types of the third or western group are likewise younger than those of the Thule Culture the reviewer fails to follow either his logic or his interpretation of the known facts.

Space is lacking for a detailed discussion of this important question but a few words regarding the Birnirk type of harpoon, one of the features of the third and assumed late group, may serve to point the issue. In the Point Barrow collection under discussion these so-called Birnirk harpoons are common, while only one Thule (Type 2) harpoon occurs. Likewise in the oldest sites as yet reported from the Point Barrow region, i.e., the Birnirk and Van Valin excavations, the Birnirk type again predominates. In the Bering sea region Jenness found strong evidence that the Birnirk preceded the Thule type of harpoon (*Ann. Rep. Nat. Mus. of Canada*, 1928, p. 77), while Collins definitely demonstrated this to be the case by direct stratigraphic evidence (*Smith Misc. Coll.* 81 No. 14: 46, 1928). Last of all Mathiasen himself has previously (*Arch. Cent. Esk.* II, p. 26) suggested the derivation of the Thule type harpoon (with vestigial sockets for side blades) from a thin, open-shafted harpoon type with actual side blades such as occur in Alaska, a description easily applicable to the Birnirk type of harpoon. Yet here we find him arguing on typological and distributional grounds that while the Birnirk harpoon may be older in the Bering straits region it is later than the Thule type in the Point Barrow area (p. 78). Thus he not only hypothecates an earlier and as yet unknown Thule horizon at Point Barrow but does the same for Bering straits to explain the observed relatively late occurrence of Thule types in this area. He even goes further and explains the late occurrence of the latter in the Bering sea region as possibly due to "the advance of a new Thule people from Asia."

This tendency to interpret all western data in terms of the Thule Culture rather than on its own merits occurs elsewhere, and, to the reviewer, mars what would otherwise be an excellent descriptive paper. The time for basing important hypotheses on undocumented collections is fortunately past and it is largely due to the previous work of the present author that this is the case. Careful excavations in the west, like those of Mathiasen in the central regions, will eventually work out the sequence of Eskimo cultures in Alaska. Fortunately such western excavations have been in progress for the last five years and many results are already available. Meanwhile such papers as the one under review have value, but the results of further scientific excavations by men as gifted as the author would be even more appreciated.

WM. DUNCAN STRONG

Among the Eskimos of Wales, Alaska 1890-93. HARRISON ROBERTSON THORNTON. (XXXVIII, 235 pp., 52 illustrations. Cloth \$4.00. Baltimore: The Johns Hopkins Press, London: Humphrey Milford, Oxford University Press, 1931.)

This book describes the life and environment at Cape Prince of Wales, Alaska, prior to such sweeping changes as the gold rush or the introduction of reindeer. It is based on an unpublished manuscript by H. R. Thornton entitled "A Year Among the Cape Prince of Wales Eskimos" which was completed prior to August 15, 1891, edited and annotated in the present volume by Neda S. and William M. Thornton, Jr. It contains an intimate account of the experiences of the author among the Eskimo of Cape Prince of Wales with various natural history observations and an added account of his life as a missionary teacher and of his tragic death. The picture of Eskimo life at this time is quite vivid and should have definite value to present day workers of a scientific or practical sort in this region. The ethnologist while appreciating many first hand observations will often be disappointed by the extremely general nature of much of the ethnographic description. The lack of any index is a handicap and, while certain footnotes have value, many others which explain to the reader that the "fall of man" is from Genesis, Chapter III, that "Lilliput" is from "Gulliver's Travels," etc., though entertaining, seem alien to the text. The illustrations gathered from many sources, are attractive but present little that is new.

WM. DUNCAN STRONG

American: the Life Story of a Great Indian. FRANK B. LINDERMAN. (313 pp. New York: John Day Co., 1930.)

The author, who is described as a one-time trapper, hunter, and cowboy, here records the reminiscences of Plenty-coups (died March 4, 1932), long the official chief of the Crow Indians and actually one of the braves entitled to the designation of "chief" by virtue of his war exploits. There are some absurdities in the book, such as the supposed rule that a man who had not counted coup was not allowed to marry until twenty-five years of age (p. 117 *et passim*); and naturally it is primarily the military aspect of culture that receives attention. Also, the spelling of native words is needlessly inaccurate and clumsy (e.g., Ah-badt-dadt-deah for akbá-tótdia, The one who made everything, God).

However, a great deal of anthropological value is sprinkled through the book. Mr. Linderman has grasped the matrilineal character of the social organization, correctly translates several clan names, and brings out the exogamous rule (pp. 7, 52, 118). The sororate is illustrated (p. 82), and the mother-in-law taboo properly emphasized (pp. 105 f., 180). According to Plenty-coups, a brother-in-law (wife's brother) had a pre-emptive right to hold the horse of a fellow-raider dispatched into the enemy's camp (p. 184)—an interesting detail. The author is less fortunate in his references to the military societies. Though he correctly describes their police functions, including the duty of restraining over-eager youths from going on a raid at the wrong time, he errs in associating these wholly secular organizations with secrecy and ordeals (pp. 52 f., 107 f., 189 f.). He is also quite mistaken in denying that the

plant formerly raised by the Crow in the spring was tobacco (p. 98). Both from photographs of gardens and an actual specimen (deposited in the American Museum of Natural History) Professor Setchell identified the weed as *Nicotiana*, though it is true that the ceremonial species is different from that *smoked* by the Crow.

Plenty-coups, like my informant Gray-bull (*The Material Culture of the Crow Indians*, AMNH-AP 21, 260, 1922) chased butterflies as a boy; and rubbing their wings over his heart was supposed to make him swift (p. 10 f.). He also gives an account of the boys' pastime of stealing meat (p. 20 sq.). His illustration of the arrow-release is thus described:

Gripping it firmly with his left hand, he deftly placed the arrow with his right, the index and second fingers straddling the shaft and, with the third finger, pulling the bow-string. The thumb's end was against the arrow notched into the string (p. 14).

Visions loom prominently. Plenty-coups himself was blessed by the benevolent Dwarfs, who play a part in Crow mythology; also, by the chickadee (pp. 40 sq., 66). It is rather remarkable that these revelations, the second connected with a finger-joint sacrifice (p. 59), were secured before he was ten years old. His dwarfish tutelaries counseled him years later in a dream (p. 245), and the chickadee was prayed to in distress (p. 143). There is reference to the dragging of skulls in order to induce a vision (p. 117), and the revelation of a wound-doctor is given in detail (p. 299 sq.). In fact, some of the very best material in the book relates to the curing of wounds (pp. 214, 305 sq.); the story of how Bird-shirt, imitating a wolf with her whelps, treated Swan's-head is especially vivid (261 sq.). Mountain-wind's divining the outcome of a battle by means of his shield is also graphically described (p. 280 sq.). References to mythology are rare, but an interesting detail is given, viz., that Old-Man-Coyote made the pintail grouse, using the muscles of a bull for its body and a wolf's claw for its beak (p. 226). This conforms closely to an as yet unpublished version of the creation story I recorded in 1931.

The bulk of the narrative, of course, relates to war. The association of scouts with wolves is constantly emphasized (p. 85 et passim); there is a good account of the hazing to which novices were subjected on the warpath (p. 119 sq.), and, of course, the honorific deeds, such as cutting of a picketed horse (pp. 19, 88, etc.), are constantly mentioned. There are references to the secret confessions of the war party's members (p. 105) and to the counting of a coup against a lodge (p. 291). A statement (p. 283) seems to confirm information I recently secured that in any one encounter only one first-coup could be counted.

The English wording is not always designed to bring out the spirit of the original, but here and there one encounters snatches which ring true: "... nothing here can last forever . . . let us act as though we were the Seven-stars in the sky that live forever" (p. 144). "Have no fears for yourselves. . . . Remember that nothing is everlasting except the Above and the Below" (p. 281 f.).

Since there is no good popular account of the Crow except Curtis's, which is inaccessible to most readers, Linderman's book serves a definite purpose and even supplies some worth-while facts for the ethnographer.

ROBERT H. LOWIE

The Narrative of a Southern Cheyenne Woman. TRUMAN MICHELSON. (Smithsonian Miscellaneous Collections, vol. 87, no. 5. 13 pp. Washington, 1932.)

Dr. Michelson was probably the first ethnographer to secure the autobiography of an Indian woman (*The Autobiography of a Fox Indian Woman*, 40 Ann. Rept., B.A.E.: 295-349, 1925) and his latest publication provides another valuable document on aboriginal feminine psychology. While the earlier narrative was phonetically transcribed and translated from a record in the current Fox syllabary, the Cheyenne reminiscences were written out in English by the heroine's son and appear in only slightly corrected form.

In both cases Dr. Michelson has added ethnographic notes of considerable importance. While among the Fox the marked prominence of the maternal uncle was noted, the Cheyenne witness was obviously influenced by her paternal aunt. Dr. Michelson seems in doubt whether the usage was individual or institutional. I rather favor the latter assumption, and since such specific relations between a father's sister and her brother's offspring are fairly frequent in North America and elsewhere, I suggest a special term, "amitate" (Latin *amita*), to counter-balance the familiar "avunculate." Among the interesting details may be mentioned the occurrence of the virginal safety girdle (p. 4), the appraisal of marriage by purchase as the highest form (p. 5 f.), the reference to a women's guild for tipi decoration (p. 9), and the co-operation of husband and wife in sacred ritual (p. 9 et sq.). Possibly of greatest theoretical importance is the footnote (p. 8) in which Dr. Michelson, while registering matrilineal residence, definitely allies himself with Mooney in rejecting Grinnell's view that the Cheyenne were once organized into matrilineal exogamous clans.

It may not be superfluous to suggest once more that autobiographies, like folktales, are capable of spontaneously illuminating those elusive attitudes and sentiments of which it would be hopeless to elicit an expression by direct questioning; and the present paper derives much of its significance precisely from this fact.

ROBERT H. LOWIE

SOUTH AMERICA

Die Feuerland-Indianer. 1. Band: *Die Selk'nam.* MARTIN GUSINDE. (1154 pp., 90 figs. 50 plates, 4 maps. Mödling bei Wien, 1931.)

The present volume is the first of a series of three dealing with the tribes of Tierra del Fuego: the Ona, Yahgan, and Alakaluf.¹

Only by many years spent among the people in question could Gusinde have obtained his material for this impressive monograph, which must be rated as the most exhaustive study yet made of any tribe in the New World. In spite of the impressive work done in the past twenty years in clearing up matters of religious and social organization among the natives of North America, until the publications of Tessenmann and Gusinde most of South America remained in these matters a veritable

¹ While Gusinde has altered the tribal names in conformity with native usage, the reviewer is keeping to the original nomenclature, thus Ona instead of Selk'nam.

Dark Continent. The author deserves the more credit for his splendid achievement, considering the most inhospitable climate in which he had to work, and the risk he ran in his investigation of the men's ceremony.

In 1922 Dr. Koppers joined Gusinde in a several months' expedition to the Yahgan, and upon his return to Europe published his popular book *Unter Feuer-land Indianern*. Professor Lowie reviewed this book in the present journal (26: 3, 414) and for the first time drew attention to certain important cultural problems developed by the Tierra del Fuego discoveries. He found astonishing resemblances between Tierra del Fuego and California because of the presence in the former region of initiations with scratching-sticks and drinking-tubes, of shamanistic schools, and the two brother culture hero story. Since this date (1924) Gusinde has continued his research and scientific writings in various journals, while scientific investigation in California likewise progressed, so that I was able this year to draw up a more complete comparison (AA 33:4) of the two culture areas. In this study I summed up the outstanding points of Ona religion as they appear in the volume here reviewed. Naturally, Gusinde in working up his permanent treatment entered into the fullest detail and supplied copious documentation of his original journal material.

A few points deserve mention. In my recent article, quoting both Schmidt and Gusinde, I stated that the Ona High God Tëmaukpl raised the heavens, like Maui of Polynesia or Quetzalcoatl of the Aztecs, in order to make room for the first race of men. Now Gusinde writes (p. 579) that it was the culture hero Kenos who performed the feat. Has Gusinde in his possession two different versions of the story?

One feature of Ona culture described by Gusinde will doubtless arouse a certain amount of doubt in scientific circles, for the like has never been claimed before for any primitive or even civilized group. Gusinde denies absolutely the presence of illegitimate children among the Ona, further claiming that only couples already promised in marriage engaged in sexual intercourse, and that adultery was unknown (p. 326).

The absence of any true form of government of real chiefs is to be expected among a very primitive people like the Ona, and yet here as elsewhere we find political systems in the forming. In every large family group there was an elderly man, the kemal, who without expressed or inherited authority had the leadership of his people.

Gusinde has perhaps wisely chosen to make this book one of pure description, with theory and interpretation reserved for a later period. In his definition of religion, however, he states:

Wenn ich in diesem Werke von "Religion" spreche, so meine ich ausschliesslich die Anerkennung und Verehrung des Temaukel.

Finally I wish to express the hope that later editions of Gusinde's works will appear at prices below \$30 a volume. Aside from the material presented, the author is master of the art of scientific narrative and exposition, and it would appear to me a pity to deprive private libraries of the privilege of owning such well worthwhile books.

E. M. LOEB

MISCELLANEOUS

Ethnologische Studien Zeitschrift für das gesamte Gebiet der Völkerkunde. Band 1, Heft 4. Herausgegeben von DR. FRITZ KRAUSE. (Halle, 1931.)

The past year has witnessed a new and most important addition to periodic anthropological literature in the appearance of *Ethnologische Studien*. The present volume exceeds in interest even the high-water mark set by the preceding numbers, containing the following titles: *Die Ethnologie der Gegenwart* by Leo J. Sternberg; *Zur neuen Völkerkunde aus goethischer Denkart und Wirklichkeitserlebnis* by R. Karutz, *Io, die höchste Gottheit der Maori* by F. R. Lehmann, *Vorislamisches in einigen vorderasiatischen Sekten und Derwischorden* by E. Krohn, and *Maske und Ahnenfigur* by F. Krause.

The article by Sternberg is a German translation of an address given in Moscow in 1926, and covers the field of anthropological theory from Tylor, Bastian, and Morgan to the present day schools. The author noted the importance of Lowie's disease concept diffusion theory, as presenting a radical departure from the orthodox American dynamic cultural studies, where intensive rather than extensive investigations have been the rule. While Sternberg's first reactions were those of disapproval, it is to be hoped that he will give the matter further consideration now that a fuller treatment on the subject has been published.¹ Elsewhere in his paper Sternberg has given every school of thought its full credit in the furtherance of anthropological knowledge, and concludes that: (1) the possibility of independent invention has remained unshaken; (2) the problem of diffusion and the problem of parallelism are quite independent of one another, and (3) evolution in ethnography also cannot be denied, although this process depends on borrowing.

Karutz presents in the next article a discussion of "Das Zweigeschlechterwesen," a recent book by C. L. Herschfeld.

Lehmann has written a concise summary of what we know concerning Io, the Maori (New Zealand) High God. This divinity was believed to reside at the top of the Maori twelfth heaven, and was himself uncreated, the source of all things, eternal, omniscient, and invisible. He was prayed to by his priests, but received no sacrifices. He called the world into existence by the power of the word. The belief in Io, in a less developed form than that of the Maori, was held by the Polynesians of the eastern islands, but was lacking in the older strata of Samoa, Tonga, and Niue, where Tangaloa was creator. Lehmann believes that the cult was brought to New Zealand with the chief migration about 1350 A. D. and very likely had its source in India or Indonesia. However, since even in Nias, where the religion resembles that of Polynesia to a surprising extent, or in India proper with its Brahma cult, the purity of the Io belief is unsurpassed, I would attribute a great part of this religious development to the local Maori college of priesthood, the *whare wananga*.

Krohn has demonstrated that the dervish of Mohammedan Asia is in the main a replica of the northern Asiatic shaman. He practices three arts unknown to Islam:

¹ F. E. Clements. *Primitive Concepts of Disease*. UC-PAAE 32, 2, 185-252 (1932).

music, dance, and the playing of tricks. He cures sickness, foretells the future, and when dancing foams at the mouth and falls unconscious.

Finally Krause has discussed masks and ancestral idols from a pre-animistic basis. The author believes that transformations from human to animal or vice versa when of a possessional form are animistic, otherwise they are pre-animistic. Such a distinction occurs in California in regard to bear doctors. Among the Wailaki a man can become a bear either by being possessed by a bear spirit or by wearing a bear skin. While I would personally agree in this case that the possessional form of transformation is the later of the two, I am not as yet prepared to agree that a pre-animistic stage of culture is known to have existed for mankind.

E. M. LOEB

Yellow Fever: An epidemiological and historical study of its place of origin. HENRY ROSE CARTER, M.D. Edited by LAURA ARMISTEAD CARTER and WADE HAMP-
TON FROST. (308 pp. Baltimore: Williams & Wilkins Co., 1931.)

This is a very attractive and instructive book, one which should be known by all anthropologists interested in the American continent. Its keynote is a proof that yellow fever is not an aboriginal American disease, but was imported by ships and ships' crews to this continent from Africa. This contention is of importance as some archaeologists have presented the theory that yellow fever and malaria were the causes of the destruction of some of the highest aboriginal cultures of our continent.

It is in particular Part III that concerns the archaeologist of Mexico and of the Maya, but this is only a fragment, and cannot be fully appreciated unless one reads the preceding parts—Section I on "The Epidemiology of Yellow Fever"; and II, entitled "Diseases Which Have, or Might Have Been Confused with Yellow Fever in the Past."

The book shows great erudition and familiarity with the original sources, often refreshed by humorous remarks, gracefully presented. The author seems to be unfamiliar with the studies of the famous archaeologist and ethnologist, Eduard Seler, and it is unfortunate that he had access only to the Brinton translations of Maya sources.

To anthropologists, the book has so medical a title that they probably would overlook it as an important contribution to their field. It is for this reason that I herewith call attention to it.

In the matter of Maya-Gregorian calendar correlation the Carter book presents an interesting point when it shows that Narvaez brought small-pox to Cozumel island in 1520. The Morley correlation places the year called Katun 2 Ahau in Maya count at 1517. Juan Martínez—using statements of Bishop Landa, the great historian of Yucatan,—places it in 1520, thus coinciding with the Narvaez visit.

Step by step we are shown the sundry expeditions of the Conquerors with records of plagues until 1648, when Cogolludo describes a yellow fever epidemic in Yucatan.

It strikes one that such a contribution as this should have been published im-

mediately after it was written. If this had been done, then it would have been invaluable as a subject of discussion for Ralph L. Roys while he was writing his *Ethno-Botany of the Maya*, as well as to all those who are concerned with the field but are not primarily specializing in the medical and medico-historical line.

Yellow Fever stands as a most valuable and important contribution to the medico, but even more so to the anthropologist.

FRANS BLOM

Fiji and the Fijians 1835-1856. G. C. HENDERSON. (333 pp., 39 maps and ills., index. 25 s. Sidney: Angus and Robertson Ltd., 1931.)

This volume was written with the object of elucidating the Journal of the Rev. Thomas Williams, Wesleyan Methodist missionary in Fiji from 1840 to 1853. As such it deals chiefly with the work of missionaries in the Fijian archipelago, and contains much historical material which would be highly useful to an ethnographer working among the Fijians.

There is little of direct ethnographic interest in the book, however, save chapter 6, which deals with the Fijian character. Herein is painted a word picture which is apparently a fair appraisal of all aspects of the native's many-sided nature.

E. W. GIFFORD

SOME NEW PUBLICATIONS

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- Dowdall, Judge. The psychological origins of law.
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- Lugard, Lord. Africa in transition.
- Mair, L. Economic man in primitive society.
- Murray, Hubert. The scientific method as applied to native labour problems in Papua.
- Murray, M. A. An ossuary of the Bronze Age in Minorca.
- Nash-Williams, V. E. The early Iron Age hill settlement at Llanmelin, Monmouthshire.

- Osborn, Henry Fairfield. The geologic age of *Pithecanthropus*, *Eoanthropus*, and other fossil men determined by the enamel-ridge-plate-grinding-tooth-measurement of the proboscidea with which they were geologically contemporaneous.
- Petrie, W. M. Flinders. Excavations at Old Gaza.
- Pitt-Rivers, G. Anthropological approach to eugenics.
- Pritchard, L. E. Evans. The Nuer of the Nilotic Sudan.
- Radcliffe-Brown, A. R. The present position of anthropological studies.
- Seligman, C. G. Human hybrids.
- Seligman, Prof. and Mrs. C. G. The social organisation of the Nilotes.
- Sergi, Sergio. Neanderthal man in Italy: the Saccopastore skull.
- Smith, G. Elliot. Peking Man.
- Suk, V. Physical anthropology and ethnic pathology.
- Thilenius, G. Some biological view-points in ethnology.
- Thompson, Campbell. Three seasons' excavations at Nineveh.
- Vassitz, Dr. The Vinča site.
- Vowles, H. P. The early evolution of power engineering.
- Wedgwood, C. A critical analysis of the so-called avoidance and joking relationships, with special reference to Melanesia.
- Wheeler, R. E. Mortimer. Summary of the current excavations on the prehistoric and Roman sites of Verulamium (St. Albans).

DISCUSSION AND CORRESPONDENCE

THE RACE CALLED NEANDERTAL

Attention has just been focused anew on the fossil human race known as Neandertal by Theodore D. McCown's record-breaking discovery on May 3, 1932, of three Neandertal skeletons in the Cave of the Kids (Mugharet es-Sukhūl) at the foot of Mount Carmel near Haifa, Palestine. McCown, son of Dean C. C. McCown of the Pacific School of Religion, is an assistant in the Department of Anthropology at the University of California. For three seasons he has been field representative of the American School of Prehistoric Research, assigned to the latter's joint expeditions with the British in Palestine. He was also a student of the American School of Prehistoric Research during the summer term of 1930.

McCown is now in charge of the fourth joint expedition, taking the place of Miss Dorothy A. E. Garrod of the British School. It was while working under the direction of Miss Garrod in May, 1931 that McCown found the skeleton of a Neandertal child, a complete study of which has since been made in London by him and Sir Arthur Keith. Their joint paper on the child will be read at the International Congress of Prehistoric and Protohistoric Sciences to be held in London, August 1-7. It is hoped that the three Neandertal skeletons found on May 3 may be in London and sufficiently disengaged from the matrix in which they were found to be viewed by the members of the Congress.

The Neandertal race was the author of the culture known as Mousterian. The skeletons were found in a relic-bearing level and the relics there are all of the Mousterian type. Even if no artifacts had been found, the skeletons would be referred to the Neandertal race because they conform physically to the Neandertal type, which became extinct in Palestine and Europe at the beginning of the Upper Paleolithic Period, perhaps 40,000 years ago. They were superseded by the Cro-Magnon race of *Homo sapiens* type.

The present is the third discovery in eight years of Neandertal skeletal remains in Palestine. The first discovery was made by F. Turville-Petre in 1925, in the Cave of the Robbers (Mugharet el-Zuttiyeh) in the valley of the Column (Wady el-Amud), near Tabgha. The cranial fragments are of a male about 25 years old and include the frontal bone almost entire, the right cheek bone, and a portion of the upper jaw. These are all we have of what is known in the literature as the "Galilee skull." They came from a level rich in artifacts of the Mousterian type.

The skeleton discovered in May, 1931, in the Cave of the Kids, by McCown is that of a child some two and a half to three years old. The brain case is practically complete; there is enough of the lower jaw to make a satisfactory reconstruction, and the remainder of the skeleton is well preserved considering the age of the subject.

The present is the fourth season of joint excavations in four caves near the foot of Mount Carmel. The results are to appear in a joint publication of two volumes: one for the cultural remains and one for the human skeletal remains. The four caves have already yielded scores of thousands of artifacts representing various

epochs from the Mousterian up to historic time. The deposits, especially the Mesolithic, are relatively rich in human skeletal remains. Some twenty skeletons dating from the Mesolithic Period have been found in the Mugharet el-Wad alone. Fragmentary bones of the Cro-Magnon race have been found in the Aurignacian deposits. The prize discoveries, however, are those of the Neandertal child found a year ago and the three adult Neandertal skeletons just reported. After publication the Neandertal skeletons will be returned to Palestine and, with the Galilee skull, will repose in the Museum of the Department of Antiquities in Jerusalem. funds for the building of which have been provided by John D. Rockefeller, Jr. Some of the Mesolithic skeletons and about half of the cultural remains will be distributed to the institutions in America which are helping to support the work of the American School of Prehistoric Research.

GEORGE GRANT MACCURDY

Director, American School of Prehistoric Research

Editor's note.—A later communication from Dr. MacCurdy announcing the finding of four other skeletons, and a letter from Theodore McCown to Dean C. C. McCown reporting a fifth, brings the total number of skeletons discovered to nine. Dr. MacCurdy states further, "A tracing just received of one of the best preserved adult skulls shows that the latter agrees with the European type in the marks of a powerful musculature, massive brow ridges, taurodont dentition and prognathism. But the prognathism is confined largely to the upper jaw and the dentition. The chin can scarcely be called receding and the frontal and parietal portions of the skull are more highly developed than in the known European examples. It is especially fortunate that these seven [eight] skeletons, as well as that of a Neandertal child found (also by McCown) in the same cave one year ago, were all in situ and associated with industrial remains of the Mousterian Epoch. McCown states that one of the adult skeletons was found clasping to his breast a huge jaw of the wild boar. The skeletons were lying near the bed rock and in a strong matrix. McCown is bending every effort to remove them safely from the deposit and ship them to London in time for exhibition at the International Congress of Prehistoric and Protohistoric Sciences, August 1-6."

ON PRIMITIVE MUSIC

In the *AMERICAN ANTHROPOLOGIST* for 1932, no. 1, Miss H. H. Roberts has published a valuable discussion of methods in the study of primitive music.¹ Inasmuch as I find myself in agreement with the author on most points, I notice with regret that some of my previous statements as quoted in her article assume a meaning which was not intended. Since the methods employed in approaching the study of primitive music are still subject to considerable discussion, I may be permitted to clarify my statements.

The author's quotations are taken from my review of her "Songs of the Copper Eskimo" (vol. 14 of the Canadian Arctic Expedition of 1913-18, Southern Party; Ottawa, 1925) which appeared in *JAFL* 39: 218-225.

On pp. 82-83 of her article Miss Roberts refers to the major and minor third. Quoting from her footnote 3:

¹ Melodic composition and scale foundations in primitive music, *AA* 34:79-107.

This does not mean, as one writer has contended (Herzog, in JAFI. 39: 220), that primitive melodies may not be termed major or minor except in cases where European influence is obvious.

Further:

His contention that our conceptions of major and minor are based *solely*² on the third above the tonic is unwarranted, as is his statement that thirds are so variable that they may never be taken as criteria.

I should like to reprint my original statement:

Turning to major and minor, in our consciousness they are strongly connected with and *chiefly*² determined by the major and minor third above the tonic. Attempts to handle primitive music with the terms major and minor rely *mainly*² upon this conception.³

On p. 89 the author refers to the neutral third:

As an argument to explain what I considered a possibly deliberate play between minor and major thirds in a number of Copper Eskimo songs, a reviewer⁴ brings forward the intent to employ the neutral third

Further:

The term "neutral third" has become somewhat like "Pentatonic" in its usage—a favorite point of argument for the sake of theory. It is also a convenient term with which to dispose of troublesome thirds which fluctuate between major and minor for other reasons than as an attempt to split exactly the perfect fifth, which Mr. Herzog gives as the origin of its use. True, it lies in the middle of the perfect fifth interval, but as a matter of fact, it can have originated in several ways, least probable of which would be the one designated. Unfortunately, as Mr. Herzog himself states in the same paragraph, thirds are the most variable intervals, not merely in primitive music (as he contends), but in our own vocal music, and cannot be so easily disposed of as he imagines.

On p. 220 of my review, to which reference is made, I have suggested that neutral thirds *too* may possibly (but not necessarily) furnish an explanation where thirds are difficult to identify in terms of "major" and "minor":

Another difficulty in dealing with thirds is the so-called neutral third.

Further:

... *in many of the cases*⁵ interpreted by her as "play between major and minor," "modulation" or "use of chromatics," the neutral third would *probably*⁵ furnish the explanation.

On p. 95 of her article, Miss Roberts goes into the question of evaluation, in connection with the use of the term "primitive":

Probably no two groups of "uncivilized" peoples are at exactly the same stage of "primitiveness,"—with some, like the Eskimo, it is clear from their lovely melodies that the apprecia-

² Italics are mine.

³ P. 220.

⁴ Reference is made to the review in a footnote.

⁵ Italics are mine.

tion of tonal color value is much greater than with most North American Indians or Hawaiians. To attempt to relegate them⁶ to a much lower musical level is doing them an injustice.

On pp. 220-221 of my review, to which reference is made at this point by the author, I find a technical analysis of the tonal structure of the Copper Eskimo songs, with no remarks of an evaluating or comparative character. The author's remark seems to refer, unless my analysis is questioned on a technical basis, to the statements I have made on p. 224:

The author contends that the Copper Eskimo songs are generally longer and more varied, with more frequent combinations of themes than Indian songs. In my opinion, the Copper Eskimo music, as a local development, stands above the music we know from other Eskimo areas, it seems richer than the music of some Indian areas, but inferior to others.

The question of the functioning of intervals in primitive music is sufficiently important to warrant this explanation which, I hope, will prevent a further misunderstanding of my previous comments.

GEORGE HERZOG

PREHISTORIC POTTERY AND CULTURE RELATIONS IN THE MIDDLE GILA

In brief reply to the recent criticism by the late Dr. F. C. ten Kate of the Hemingway Expedition of 1888 and 89 of my alleged neglect of early field workers in a paper published under the above title (*American Anthropologist*, vol. 32, no. 3, 1930) I should like to state the following.

It is assuredly not for one generation to neglect the studies of those preceding them. Dr. ten Kate admits, however, to the regret of younger archaeologists as well as of older, that no full study of the reconnaissances, excavations, or material gathered by the Hemingway Expedition was ever made or published. Consequently, what the present day archaeologist may gather of its results is limited to the one American and the four brief foreign references noted by Dr. ten Kate, or to even briefer notes in publications of men who happened to have come in contact with the expedition.

Until recently, Fewkes' detailed papers on Casa Grande, and other papers merely locating and briefly describing ruins seen, published in the Bureau of Ethnology reports, and Kidder's short survey of the section then known as the "Lower Gila," published in his *Southwestern Archaeology*, comprised the only available direct scientific data on the region now designated the "Middle Gila." Publications on work done in adjoining areas were of value, although usually rather indirectly, to those interested in the field of the Middle Gila. Pottery sequences and relationships in this region had never been thoroughly investigated; indeed, work has not been even approximately finished on these questions. Recently several institutions have interested themselves in the area—those carrying on investigations at the time my article was published being the Los Angeles Museum, the University of California, Gila Pueblo of Arizona, the Arizona Museum of Phoenix, and the Arizona State Museum in connection with the University of Arizona at Tucson.

⁶ Reference is made to the review in a footnote.

As for the

scores and scores of parallels indicating a close relationship of the "Middle" and "Upper Gila" cultures and the present pueblo culture in general,

while the modern pueblo culture is generally accepted as a continuation of that of the prehistoric period, it has never yet been proven from what branches of the prehistoric the modern has descended. Recent evidence collected by the Museum of Northern Arizona indicates that the historic Hopi pottery is a lineal descendant of prehistoric prototypes of the Jeddito district. Evolution of the wares of Pecos from prehistoric to historic times indicated that the people responsible for the late wares were probably descendants of those who had previously lived in the same district. That small groups from the arid Middle Gila trekked northward toward the end of the prehistoric period is probable, although never yet definitely proven. Evidence of intercourse and possibly of some visiting expeditions between north and south is plentiful, but when one considers the general similarity of the pueblo culture all over the southwest, it is obvious that only detailed examination of the distribution of physical or cultural characteristics distinctly peculiar to one region may be taken as evidence of the movements of the people of that region. Absolute knowledge of such distribution must depend upon more extensive excavation in the Southwest than has yet been made by all the expeditions who have ever sunk spade into these ruined dwellings.

In objecting to the statement that evidence of forced abandonment of the region was at present lacking, Dr. ten Kate avers,

On the contrary, Cushing has proved beyond a doubt that earthquakes were one of the main causes for the abandonment of whole towns.

In *Earthquake History of the United States, Special Publication No. 149, U. S. Coast and Geodetic Survey Dept. of Commerce, 1927*, were listed but five earthquakes in Arizona. Their intensity ranged from that sufficient to crack plaster on buildings without injury to those buildings, to that capable of partially or totally destroying buildings. They are listed 1906, Flagstaff, 1910, Flagstaff, 1912, Flagstaff district; 1913, throughout Arizona and New Mexico, details lacking, 1916, East edge of Arizona. These, it will be noted, are all in northern and eastern Arizona, mountainous and volcanic country, entirely different from the sandy plains and low mountains of the Middle Gila. Something of the shock of the earthquake of May 3, 1887, whose epicenter was in Bavispe, Sonora, Mexico, was felt as far northward in Arizona as Tucson and Tombstone. No structures then standing were destroyed. This was the only earthquake known in southern Arizona in historic times, according to old timers in the district. It is the only one reported for southern Arizona in the bulletin cited, although shocks of California earthquakes are claimed to have sometimes reached as far eastward as Yuma during the early American period.

To quote Dr. G. M. Butler, Director of the Arizona Bureau of Mines, May 13, 1931:

Apparently most of Arizona is now, and has been for a long time, very stable. We know of no faults along which movement is taking place, and everything indicates that the stresses

have been in a state of equilibrium for a long time. I do not think that anyone would dare state positively that earthquakes did not disturb the prehistoric inhabitants in Southern Arizona, but, personally, I think it is unlikely that they did so.

FLORENCE M. HAWLEY

Arizona State Museum
Tucson, Arizona

THE CULT OF THE CROCODILE

The recent discoveries by Professor Anti of Padua University at the site of Tebtunis (Fayum, Egypt) show that crocodile worship was peculiar to that place as at Kom Ombo (Upper Egypt). The site is regarded as Graeco-Roman and dates as such from the IVth century B.C. It is evident that the local deity Sebek (Seknebtuni or Sebek, Lord of Tunis) was adopted by the Greek colonists engaged there locally in agriculture. The exact origin of the crocodile cult is undetermined. The reptile is regarded as a symbol of fertility and also strength.¹ Nilotic people seem to have regarded the reptile as a river god and there are vestiges of this belief to-day.

A fortress monastery, 400 feet by 200 feet, which was enclosed by a brick wall 13 feet thick and 20 feet high, was discovered at Tebtunis. The building was similar to the Coptic fortress monasteries so familiar to tourists on the Nile. The priests of the Tebtunis monastery appear to have practised all the arts and sciences for which their medieval Christian successors became famous in Europe. Definite traces of surgery, medicine, literature, painting etc. have been found in the dwellings.

This crocodile cult is found in many other places. The *Illustrated London News* of May 30, 1931 contains photographs of the sacred crocodile of Ibadan (Nigeria) which is said to be at least 150 years old and still possesses a hearty appetite.

It is a curious fact that certain natives from Argungo, near Sokoto, seem to possess the power of charming these reptiles. Pilgrims from Argungo to Mecca used to catch crocodiles in the Blue Nile (Sudan), and after killing them ate the flesh. The writer had all his servants and camel-men laid up for several days with swollen glands, which they attributed to a surfeit of crocodile flesh when traveling on the Abyssinian frontier. It is possible that strict Moslems avoid eating the flesh of the crocodile on much the same grounds that Europeans abstain from pork, Delta Nile fish, goat's milk and other recognised germ carriers in Africa.

ARTHUR E. ROBINSON

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St. Albans, Herts
England

DISCOVERIES IN PALESTINE

Tell-el-Ajjul

It gave us much pleasure to renew our personal acquaintance with Sir Flinders Petrie at his recent exhibition at London University College.

¹ When I was in Nubia the ovaries of the crocodile were publicly sold and eaten as aphrodisiacs and a cure for barren women. H. E. R.

The excavations at Tell-el-Ajjul are of more than local anthropological importance. The results controvert definitely the popular notion that the Hyksos or Shepherd Kings were merely nomads. Tell-el-Ajjul was abandoned about 2000 B.C., probably through malaria, and a new site was fixed at Gaza, five miles to the north. A secret, 500-feet-long tunnel was found which communicated with the town and the outside plain. The earliest remains were found in domed chambers of the copper age, and the pit tombs date from the bronze age. In some cases the master of the house was buried with his asses. Skeletons of the horse (22-inches-long skulls) introduced by the Hyksos of that period have been found with human remains in adjoining graves. Cranial and other measurements have not been published yet.

Beside one of the larger houses there was a shrine, plastered white inside, and approached past a low bench embedded with sea shells in a sunken floor with a vent or drain. At first sight we thought that this was the floor of a ceremonial purification chamber for females, as the symbolic significance of certain classes of shells is well known to all anthropological students. With the exception of three or four which are pierced, all the shells appear to have been gathered from living shell fish. Sir Flinders Petrie considers that the building was used for foot-washing before entering the shrine.

This is merely a preliminary notice. An illustrated article by Sir Flinders Petrie appeared in the *Illustrated London News* of June 20, 1931, and it is to be hoped that the appeal for funds will enable the work to be continued at this ancient Caananitish city.

ARTHUR E. ROBINSON

LETTERS

The Editor
American Anthropologist

DEAR SIR:

During the night before Christmas eve a disastrous fire destroyed a portion of the library of the University of the Witwatersrand, including the large collection of books belonging to the department of social anthropology.

The loss was only partially covered by insurance, and it will be readily understood that, in these days of world-wide depression, it is difficult to raise the money for the prompt re-purchase of the books destroyed.

The works of all the leading American anthropologists were very fully represented in the library, and constantly referred to in the lectures and used by the students. Their loss is especially serious.

In these circumstances, I venture to appeal to my anthropological colleagues at American universities to help me to build up again, as soon as possible, an adequate working library for my students. Author's copies or duplicates—addressed to The Librarian, University of the Witwatersrand, Johannesburg, South Africa—will be

gratefully acknowledged, and the donor's name, together with the occasion of the gift, recorded in the books themselves.

Yours truly,

AGNES WINIFRED HOERNLÉ

Lecturer in Social Anthropology

University of the Witwatersrand
Johannesburg

Editor, American Anthropologist

SIR:

May I call the attention of your readers to the Seventh Seminar in Mexico, meeting in Mexico City July 3-23?

The Seminar in Mexico is a "cooperative study of Mexican life and culture." Its membership is open to people who have an interest in international relations and who have a genuine desire to understand the Mexican people. The three weeks' program of the Seminar includes lectures, round table conferences and field trips.

The lectures, given by authorities in Mexico, present various phases of Mexican life in the fields of education, art, international relations, economics, music, folklore, sociology and government. Among the leaders who will lecture before the Seminar are Moises Saenz, Carlos Chavez, Ramon Beteta, Diego Rivera and Rafael Ramirez.

The round tables give small groups the opportunity to study and discuss some subject in their particular field of interest. The leaders and their subjects in this year's session include Judge Florence E. Allen on International Relations, Dr. Ernest Gruening on Economics, Count René d'Harnoncourt on Arts and Crafts, Dr. Charles W. Hackett on the History of Mexico, Miss Elizabeth Wallace on Latin American Literature. Of special interest this year will be the *round table on Archaeology* led by Dr. Frans Blom. Among other subjects, this group will study the recent discoveries made at Monte Alban, and at the close of the Seminar a trip will be made to Oaxaca to study the pyramids themselves.

Field trips will be made to Puebla, Oaxtepec, Xochimilco, Cuautla, Cuernavaca, and Taxco where members of the Seminar will be guests at the "casa" of the Committee. The object of these trips is to visualize the historical background, to see the schools at work and to understand the indigenous culture of Mexico.

Mexico is an excellent place for a vacation. The summer is cool and the country affords many tempting opportunities.

Inquiries and applications should be addressed to.

HUBERT C. HERRING

For the Committee on Cultural Relations with Latin America

112 East 19 Street
New York City

ANTHROPOLOGICAL NOTES AND NEWS

SOCIOLOGUS

The *Zeitschrift für Völkerpsychologie und Soziologie*, edited by Professor Richard Thurnwald (Berlin), will henceforth appear in a bilingual edition under the title of *Sociologus*. As the Editor informs us, he intends to present an equal number of English and German articles, with summaries in the alternate language. Reviews will also be in both languages.

The tendency of *Sociologus* will be to emphasize the realistic trend in Sociology. While philosophical interpretations are not to be excluded, the stress will be on material gained inductively. We reproduce the Prospectus issued.

Prospectus

This journal aims to become an international forum for the exchange of ideas referring to sociology and social psychology. No science can be limited to one country. It should rely on the cooperation of all. Particularly is this true of sociology, the science of society. Any aggregation of people takes an egocentric view of itself and others. We cannot afford to contemplate it quite objectively. But we can consider it from the angle of different aggregations. The attitudes of mind of societies toward each other, with their respective traditions and cultural patterns, can, to a certain degree, replace the value of the objectivity in other sciences. Such a "human socialization" of the science of society seems indispensable. The edition of this journal, in two languages at least, may help in opening up an avenue of mutual fructification of views and studies as well as in solving the tremendous social, political, and national problems of our time. The social sciences should not evade the responsibility of this task in which all nations should join.

These are lofty aims, and we can assure Dr. Thurnwald of our hearty sympathy and our willingness to collaborate with him.

A SUMMER SEMINAR ON FAR EASTERN STUDIES will be held at Harvard University, July 6 to August 17, 1932, under the auspices of the Harvard-Yenching Institute, the Committees on the Promotion of Chinese and on Japanese Studies of the American Council of Learned Societies, and the Society for the Promotion of Japanese Studies.

The aim of the Seminar is to bring together for six weeks . . . a group of trained and mature scholars who, although their major training has been in other fields, find it necessary or desirable to offer instruction in the Far Eastern civilizations.

The group will meet daily, excepting Saturday, for general directed round-table discussion under the leadership of three specialists in Far Eastern studies, and in smaller groups for the consideration of specific problems. The discussions will supplement factual information with consideration of bibliography, tools of research and instruction, criteria for differentiating fact and opinion, status of present-day research in the fundamental problems, organization of Far Eastern studies and repositories of information concerning them. Arrangements will be made for special instruction in the Chinese and Japanese languages specifically designed to meet the needs of the scholars who attend. Plans are in progress for special exhibitions at museums in and near Boston and of private collections of Far Eastern materials. A consider-

able number of special lectures will be offered by authorities in Far Eastern subjects. It is possible that conferences will be held on the promotion of Far Eastern studies, which will bring to Cambridge most of the scholars engaged in those studies at that time in America.

The staff of instruction is:

Professor of History and Director of the Seminar: ARTHUR W. HUMMEL, Chief of the Division of Chinese and Japanese Literature, Library of Congress, Washington, D. C.

Professor of Philosophy: LUCIUS C. PORTER, Professor of Philosophy in Yenching University and Visiting Professor at Harvard University.

Professor of Oriental Art: LANGDON WARNER, Fellow of the Fogg Art Museum for Research in Asia and Lecturer in the Fine Arts at Harvard University.

Further information may be obtained by addressing the Secretary of the Committee of Direction, Mortimer Graves, American Council of Learned Societies, 907 Fifteenth Street, Washington, D. C.

THE CATHOLIC ANTHROPOLOGICAL CONFERENCE held its seventh annual meeting at the Catholic University of America, Washington, D. C., March 29, 1932. The programme included: Rev. Joseph Diehl, the Position of Woman in Samoan Culture; Dr. Anna Dengel, The Woman of India at Home; George E. Noronha, The Changing Outlook of the Women of India; Regina Flannery, The Position of Women among the Mescalero Apache, J. N. B. Hewitt, The Position of Woman among the Iroquois; Rev. John M. Cooper, The Position of Women in Primitive Culture

GRATIFYING PROGRESS has been made in the collection of material relating to *Indonesian Customary Law* as a result of Dr. Holleman's mission to the Philippine islands, under the auspices of the American and Philippine sections of the American Council of Learned Societies committee. Thanks to the effective arrangements made for Dr. Holleman's visit by Dr. Rafael Palma, and especially to the generous and public-spirited coöperation of Professor H. O. Beyer of the University of the Philippines, there have been transcribed 10 manuscript volumes of exceedingly valuable material, gathered by Professor Beyer during a residence of many years in the Islands, and thoroughly illustrative of the application of customary law in all its forms.

THE AMERICAN ASSOCIATION OF PHYSICAL ANTHROPOLOGISTS which met in March in Washington, D. C., was addressed by Dr. C. J. Connolly, of the Catholic University of America, on the brains of apes. Dr. Connolly included in his report the statement that of the four anthropoid apes the gorillas are dolichocephalic, the other three inclined to be brachycephalic, that the greater development of one side of the brain in humans, which accompanies pronounced right or left handedness, is practically absent in apes, what little difference exists generally being in favor of the right hemisphere. In apes, as in humans, only a slight sex difference in the appearance of the brain can be noted, the brain of the female ape is apt to be smaller than that of the male but is larger in proportion to the body weight.

Differences in the anatomy of Whites and Negroes, found through studies made at Washington University, St. Louis, were reported to the Association by Dr. Robert J. Terry and Dr. Mildred Trotter. Dr. Terry stated that the collar bone of Ne-

groes tends to be longer than that of American Whites, and distinctly narrower at the end where it is bound by ligaments to the shoulder blade. At this end, powerful lifting muscles are attached, and in the white man the broader, spatulate end of the collar bone affords a greater area for attachment of the muscles. Dr. Trotter reported that in studying the relation of the sciatic nerve in the leg to the muscle which turns the thigh outward, she had found less variation among whites than among Negroes.

Racial tendencies to a distinctive shape and development of the tympanic bone of the ear were reported by Dr. T. D. Stewart, United States National Museum. Dr. Stewart stated that the peculiarly thick and massive development of this bone in Eskimo skulls he has examined is not explained. It does not affect the hearing, nor does it appear to be a protective adaptation against letting cold into the ear; Indian tribes of northern Canada have tympanic bones of no particular thickness.

Dr. Harold Cummins, Tulane University, reported the first scientific investigation of palm and sole patterns of North American Indians, in pursuit of the study of characteristic racial differences of man. Dr. Cummins found in Shoshoni-Arapaho prints "a definite racial trend," emphasized as distinctive when the prints were compared with those of white subjects, but showing many points of similarity with the prints of Eskimos and Chinese. One advantage of dermatoglyphics as a criterion of racial differences, Dr. Cummins said, is that these ridged patterns on the hand and foot are established in their final form long before birth, remaining unchanged throughout the life of the individual. The prints are thus entirely predetermined. There is no question of alteration by environment or experiences such as is sometimes raised when head form and stature are cited as racial characteristics.

A SYMPOSIUM ON ILLINOIS PREHISTORY marked the first meeting of the newly organized section in Anthropology of the Illinois Academy of Sciences which met in Chicago May 6 and 7. Papers read included studies of the archaeology of the Illinois river, the Rock river country, the Wabash valley, and the Cahokia region near St. Louis, and of the geographic factors influencing the movements and settlements of prehistoric peoples in southern Illinois. Professor Fay-Cooper Cole spoke on the methods of archaeology employed in the upper Mississippi region with particular reference to Illinois. Dr. M. M. Leighton, State Geological Survey of Illinois, discussed the age and chronology of various Illinois river and Mississippi valley mounds as determined from the study of soil profiles and the processes of weathering. Dr. W. C. McKern sketched the difficulties of synthesis and interpretation of local site chronology, in terms of the regional distribution of industries and pottery features. Dr. Bruce Merwin presented suggestions concerning the presence of prehistoric Siouian sites in southern Illinois.

AWARDS BY THE SOCIAL SCIENCE RESEARCH COUNCIL, of grants-in-aid and fellowships in Anthropology during 1931-1932, have been announced as follows:

Research fellowships: Haviland Scudder Mekeel, "Culture Change in its Psychological and Sociological Aspects;" Morris Edward Opler, "The Present-day

Culture of the Apache Indians on the Mescalero Reservation;" Hortense Powdermaker, "A Functional Study of the Negro Family."

Grants-in-aid of research: Edward Winslow Gifford, to aid in the preparation of a study of the ethnography of the Yavapai Indians, John C. Parish, to aid in the completion of a history of the Indian country of the Trans-Allegheny region, 1733-1763; Hortense Powdermaker, for the preparation for publication of "Women in Primitive Society," William H. Wiser, to aid in the completion of a sociological study of a North Indian village.

The Research Fellowships are open to both men and women of American or Canadian nationality provided (1) they are not over thirty-five years of age, and (2) they are the holders of the Ph D. degree or its equivalent in terms of other types of training and experience. The closing date for making application for 1933-34 is December 1, 1932.

The grants-in-aid are open to mature scholars, without reference to age, whose ability to do productive research is attested by first-class completed work. The project for which aid is sought must be well under way and promise significant results.

Further information may be obtained by addressing the Fellowship Secretary and the Secretary of the Committee on Grants-in-Aid, respectively, Social Science Research Council, 230 Park Avenue, New York City.

EXHIBITION OF AMERICAN ART. At the Prussian Academy of Art Dr. Walter Lehmann (Berlin) arranged a noteworthy exhibition of specimens illustrating the artistic achievement of the higher American cultures. Not only the treasures of the Museum fur Volkerkunde in Berlin but also other German institutions, e g. Hamburg and Munich, as well as the private collection of Heinrich Hardt and the Gaffron family were utilized. The exhibition was opened on December 12 1931 and closed January 17, 1932.

AT ITS ANNUAL MEETING on April 27 the National Academy of Sciences elected to membership Dr. John R. Swanton. The other anthropologists in the Academy's Division of Anthropology and Psychology are Franz Boas (chairman of the Division, 1932), J. H. Breasted, W. H. Holmes, A. Hrdlicka, A. L. Kroeber, B. Laufer, R. H. Lowie, C. H. Merriam; C. Wissler.

THE BIOLOGICAL FELLOWSHIP BOARD of the National Research Council in February appointed Miss I. T. Kelly (University of California), who is to study a Basin Shoshonean tribe from an ethnographic and geographical point of view. In April the Board appointed Miss May Mandelbaum, who intends to investigate certain socio-anthropometric problems raised by Roscoe's book on *The Bagandwa* of East Africa.

THE DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY held its annual meeting on Friday, April 22, 1932. Professor A. T. Poffenberger (Columbia) and Professor Ralph Linton (Wisconsin) were elected chairman and vice-chairman, respectively, for the year beginning July 1, 1932.

American Anthropologist

NEW SERIES

Vol. 34

OCTOBER-DECEMBER, 1932

No. 4

THE PSYCHOLOGY OF ACCULTURATION

By RICHARD THURNWALD

NOTE. This article is presented to Geheimrat Hans Virchow, professor of Anatomy at the University of Berlin, as a token of veneration and admiration for his work in anthropology, at the occasion of his eightieth birthday. Together with congratulatory offerings of the same kind, articles of various authors will be combined for substituting a "Festschrift."

ACCULTURATION is a process, not an isolated event. The acquisition of any civilizatory accomplishment is not limited to the act of acceptance like the moving of an object from one case in a museum to another. Such an event only sets in motion the socio-psychological process, for a society is a living body the blood of which is composed of the psychological occurrences of the ever changing relations between its constituent members.

This, of course does not necessarily imply that the object itself must undergo a visible change in the other society. It might or it might not do so, it might alter its meaning or function, as with the use of mats, knives, or hoes as symbols of value, or, on the other hand, the use of coins as necklaces. But at any rate the acceptance of a new article implies a change in the attitudes, social behavior, or even in the institutions of the receiving people. Such an alteration may be either slight or of great import, either sudden or gradual, depending on the actual conditions. It may often involve further changes in other realms of life. The introduction of European money in Africa, for instance, has provoked an acquisitive bent and a desire for monetary gain. This may lead to competition on the one hand, and on the other to a change in the structure of the family in that it shifts the basis of marriage from the concern of two clans or families to the affair of the two contracting persons.

This process of adaptation to new conditions of life is what we call acculturation. If a man emigrates from Europe or North America to the tropics he must obviously adapt himself to new circumstances. These are mainly climatic, of course. But when we speak of acclimatization we often also imply a more far-reaching adaptation involving social life.

To take an outstanding example let us examine the case of North America at the coming of the white man. There were then the adaptations of two races to be considered. For the European the important change was not that of climate, but of all those social and personal factors which arise from making a home in a new soil and among primitive surroundings. Our problem here, however, is not with the white man but with the Indian who was likewise affected, but in a different way. His life was opened to new implements as well as to new impressions. He did not so much change his habitat as his mode of living. The maintenance of his ancient skills were now to be jeopardized by the results of trade. From the moment that he received iron, in the form of knives, axes, and other such "indispensable" implements, his life became different. And, the very process of the acceptance of these new things is indicative of the path of acculturation. It may well have been comparable to my own experiences in New Guinea among a people who had never seen a white man. At first they had only suspicion for the iron tools. So far from having used them, they had never even set eyes on them. My boys would exhibit their use, and then the Papuans would make their own gingerly essays. I worked like a salesman demonstrating the latest vacuum cleaner or the newest device for slicing vegetables, and my endeavors met with similar rejections and doubts before final acceptance.

In fact, psychologically, the process is the same as that of accepting a new contrivance for one's own daily use. The adaptation to new inventions is in the main, similar to that, whether the inventions are from one's own people or from abroad. The situation is closely related to the process of learning which we all have to face from birth to death, although the periods of youth are filled with more intensive learning and the later stages with less. The cessation of learning psychologically means death.

What is learning? For our purposes we must discriminate between intellectual learning and what we may term "development of personality." Intelligent learning consists for the most part in an intentional storing of knowledge for the acquisition of skill in handling objects or affairs. One for instance learns farming, or repairing of automobiles, or the study of law or medicine. A man's continuous responses to the outer world become his experiences in so far as the remembrance of them is stored up consciously or unconsciously. These experiences in turn represent a kind of "learning," for they help to direct the change of the man's attitudes and behavior, and to make impressions on his mind and character. There follows a preference for certain reactions or stimuli. A man brought up in conditions of great poverty may in the beginning be induced to thrift, whereas the same man, becoming rich later in life, may prove a waster. Furthermore there might

be changes, say, in political viewpoint due to emotional occurrences. Similarly, sexual experiences of various kinds are responsible for a change in character, as for example those described by the Freudian school.

The process of learning, however, refers mainly to the individual, while the problem of acculturation deals with social phenomena. Can we not apply the results of investigations in the domain of personality to social processes, and to what extent?

Every association consists of personalities and as such is itself a living entity. The main problem is the interaction of the individuals forming such associations. Any variety of personality implies specialization. Even in primitive society, every person is a specialist in his way. One may be clever at snaring birds, another a deft plaiter of baskets, still another an expert in raising fine crops, the next a brave warrior, a shrewd sorcerer or a convincing orator, and so on, in spite of the fact that each one is acquainted with the accomplishments of the others. It is the cooperation, particularly that of the leaders in each branch of pursuit, that builds up the community. Hence a complementary activity, like the working of cog-wheels, is present in each cluster. A similar agency operates between family heads, in a clan, in guilds. Further, a corresponding procedure may be observed among such clusters in still larger units, such as a social class or a state. When parallelism of endeavor occurs, jealousy and competition are however aroused, as for instance, between certain sorcerers, warriors, or hunters. A similar rivalry may also arise among competing clusters.

These basic clusters may join with larger units in a vocational or political group of a society. Within these a remarkable process is going on, consisting in the imitation and spontaneous conformity to the views or actions of experts or leaders. The accomplishments of an acknowledged master may serve as models, although neither he nor the others may realize this fact. Such a specialist may have been selected as a leader by a process of which no one was aware.

There are, however, persons who are apt neither to cooperate nor to lead, but who turn aside in their own way, thus falling into relative isolation. The same occurs with clans, tribes, or states, who may carry on a life more or less apart from the larger societies.

Acculturation is closely associated with all these processes. There is a selection of men as well as objects, ideas, and attitudes. Such a sifting takes place in the face of anything new offered to one man or group of men. On the other hand, it is not society, as such, that selects. It is this man or that man that gets an iron knife or tomahawk. What attitude the whole society will take very much depends on the position of the particular man in his

society. This also refers to the reaction, say, of a Papuan village upon the appearance of a white man. Here you may be received cordially, there, with enmity. On later inquiry you may discover that some old man's good-will or his fear was the determining factor in your reception.

Even material objects never remain as they are, since they meet another environment, another society, other men with other aims and traditions. Consequently their function changes. In New Guinea big kitchen knives are generally used. But the natives do not employ them in the kitchen, since such an apartment is lacking. With them they cut branches of trees, chop wood, and even cut human heads in the fighting that goes on between them. The ax used by us for cutting wood is employed as a weapon by the Solomon Islanders and by the Indians. The iron blade of a plane serves to replace the stone chisel or the shell blade of an ax. Similar changes in function take place in the transfer of a utensil from one native tribe to another. The boomerang used in Australia became a ceremonial instrument in the New Hebrides and some of the Solomon Islands (Buin on Bougainville), and the throwing knife of the Sudan tribes, a weapon, becomes a household utensil among certain Bantu, and a ceremonial instrument among other Bantu.

There is a considerable difference in the rhythm and tempo of diffusion of various objects. For instance, it seems that objects of luxury spread easily. I found glass beads in the interior of New Guinea in places where white men had not been before, again, sea-shells were found among many mountain tribes. Narcotics and stimulants seem also to spread quickly. Consider the use of the betel-nut or the kava over large areas. It is particularly noticeable that tobacco is planted and smoked in the mountain ranges of New Guinea, although it was not introduced on the coast of that island until the middle of the 18th century, perhaps by English or Dutch seafarers. Spanish traders seem not to have used it. Devices which fit in particularly well with the system of life of a people are usually accepted with comparative readiness: as for instance the pile-house in regions of inundation, the gun by most natives, the bow and arrow in olden times, and the horse among the North American Indians.

The same holds true of institutions, customs, and ideas, though the process and rhythm of alteration is different in each of these cases. The methods of becoming acquainted with other institutions show, however, considerable disparity.

The selection of objects, customs, institutions or ideas which shall be chosen depends in a high degree on the ways of contact. For instance, the taking of women implies the acceptance of such devices or implements as are associated with the particular activities of the women in their own

society according to the traditional division of labor between the sexes. If slaves or captives of war are used as vehicles for the acceptance of foreign civilization, another kind of selective process is at work. Handicrafts, devices, or particular knowledge on the part of the men is taken over. If a migration occurs, a special adjustment of the people to the new conditions of life is necessary. For one plant or animal in the old country, another in the new may be substituted, even in legend.

The far-reaching changes brought about by a new instrument are not, at the start, generally taken into consideration. The innumerable social consequences of the contact between herdsmen and agriculturists, when men of the pastoral clans would take wives among the latter, have certainly not been calculated. The use of machinery, of explosives, even of railways, which may originally have met with the derision received by other inventions, leads to a change of institution, as well as to another attitude of mind, and thus perhaps to further inventions.

The acceptance of new institutions involves different processes. Institutions embody the social system of a people, encompass the very atmosphere. From them are drawn the automatism for behavior in daily life. But any change in customs implies the working of a conscious process in order to achieve new attitudes and conventions. Such a change in pattern means "adaptation" in customs and institutions, which sometimes has far-reaching consequences comprehended only by time.

A similar process occurs with ideas, although they are always more in flux and bear differently on the standard pattern. New concepts as contained in legends, myths, or in poetry, do not necessarily conflict with traditional patterns, although such may often happen. Again they may seem to accord, but later even turn out to be revolutionary, as with European ideas of justice and procedure with litigants in Africa. Each adaptation is a vehicle for "evolutionary" development. Whether it works in a proper "revolutionary" sense depends less on its nature than on the attitude taken by the society toward the consequence involved.

Obviously, the results of transmission as explained cannot be considered as mere additional acquisitions. The effect for the future is hard to ascertain. The acceptance of anything material or immaterial may, and generally does, have consequences in various spheres of life. It radiates to the whole complex of the cultural constitution of the people concerned. There are three main factors to be taken into consideration:

1. The attitude and the relation between the "giving" people and the "accepting";
2. The constitution and tradition of the accepting people; and,

3. The circumstances in which such transference takes place.

ad 1. Of great importance is the difference in civilizatory equipment or what may be termed the "cultural tension" of the two tribes or nations that clash. This may be observed with the European coming to Africa, and in similar cases in the past, when pastoral tribes happened to meet agriculturists, or when the latter came up against hunters, trappers, and collectors of plants. As scientists, we should refrain from evaluation of cultural differences and content ourselves with regarding such a cultural tension only in reference to the drives and traditions with which they are imbued.

The people concerned, on the other hand, do not scruple to make such evaluations. The formation of values on their part involves their emotional attitudes in reacting to the exponent of another culture. Such valuations, and reaction patterns, however, are not always the same. In the course of contact on both sides, there is a certain current and possibly a similar rhythm. At first the strangers meet with distrust and suspicion. A recourse to violence is often unavoidable unless one party is, in some way, accepted as a "superior."

(a) The suspicion and resentment of those mountain tribes in New Guinea who, until their encounter with me, had never met a white man, was diverted for a while by a certain deference and awe as for a supernatural being because of the overwhelming number of new impressions. They did not dare to shoot their arrows at me although they tried several times. One could frighten them by lighting a match, blowing a whistle, reflecting the sun's rays upon their eyes with a mirror, holding a watch at their ears, or pulling out the photographic tripod.

(b) The case is different with tribes nearer the coast. They come to know the European's excesses and shortcomings and will take revenge on him should he violate tabus or conventions or behave indecently. A certain feeling of inferiority, it is true, keeps him at a distance from the European, but he will not on that account tolerate indiscriminate license or infringements of propriety.

(c) A third stage is reached by those natives who come in more or less in constant contact with white men. They soon acquire the attitude of a "blasé," who feigns to know all about European accomplishments and even arrives occasionally at a remarkable stage of identification with the European. When I once in New Guinea brought a boy home to his native village in my motorboat, he addressed his people in pidgin-English, not in his native tongue, although he had stayed with me only about three months. Another asked me for a white suit to put on when he returned home. His people at first did not recognize him, and then refused to accept him, until

he had rid himself of this white man's brand, and stood before them as his deity created him. The white man, having become a kind of ideal to be imitated in various ways, is able to exercise tremendous influence among natives who have reached this stage of transition.

This phase, the "devouring" of foreign civilizatory equipment, is one of the most significant. It may be observed in many places and in the history of many peoples. In Africa it is still dominant, and was so several decades ago in Japan. It existed in the early Middle Ages in most of the European countries; it prevailed among the old Romans for some time when they came in contact with Greek civilization, and later when they become acquainted with the Orientals.

We should note: first we generally find a stage of withdrawal from the unaccustomed. If, by certain events of emotional content, this repellent attitude is changed, a wave of imitation, almost of identification with the new or strange, gradually inundates all traditions. This is a most critical state for the accepting community.

In some cases a new social entity may ensue, as with the Rehoboth Bastards in Angola (Africa), composed of Transvaal Boers and the native Negroid element. The formation of such a new body as a matter of fact has occurred in history repeatedly, and all European nations bear out that evidence. The English nation, for instance, is built upon an earlier pre-Gaelic and Gaelic population, augmented considerably by a stock of Anglo-Saxons, Danes and Normans, and many localities still bear the stamp of the origin of their inhabitants. In present-day Italy we find merged, besides others, Lombards, Goths, Ligurians and Tyrrhenians. In Spain are remnants of the ancient Iberian and Ligurian stock, of Goths, Berbers and Moors, etc. But what is left of these peoples has lost its individuality. Such a losing of ethnic personality accounts for the "passing of a people" or the so-called *Folkertod*.

There may be, however, varieties and degrees of such loss of individuality. Often it is only the language, the political organization, or the social structure that is destroyed. The Scandinavian Waraegans in the early Middle Ages lost their language in Russia (Kiev), as did their Norman cousins in France and Sicily at about the same era, although they came as conquerors, a fact that undoubtedly must be ascribed to their having taken native wives, and thus procreated a mixed race, with the passing of their own ethnic individuality. Vice versa, the continuity of an appellation, or even of a language, in no way warrants ethnic or racial individuality. The modern Persians and Greeks speak languages similar to those of their ancient predecessors, but in the meantime their ethnic and racial stock has

been radically transformed. They survive more in our romantic imagination than in reality. In Egypt even the language of the towns has been entirely superseded by the Arabic tongue.

In the archaic or Old Oriental type of state prevailing almost up to the age of the printing press, language and nationality were of secondary importance and could easily be preserved everywhere. It is only in more recent times, with the increased importance of the printed word to those living on an individualistic democratic basis, that the spoken language, especially as taught in the schools, became a matter of political dispute, as in Europe. It is remarkable that African natives today not only do not object to learning English but even seek it most avidly as a key for disclosing the mysteries of Western thought and civilization. But by that they do not consider giving up their own language. The loss of political power, however, may be associated with the disappearance of ethnic and racial strength as with the North American Indians, Australian aborigines, Polynesian natives, the Bushmen and pigmy tribes of Southern and Central Africa, the Kubu of Sumatra, the Vedda of Ceylon, and a score of hunting, trapping, and collecting tribes in various parts of the world. Some of these tribes, consisting of what may be termed a "residue" population, for centuries past have been on the path of retreat before the more aggressive races of agriculturists, and particularly of herdsmen.

That the loss of political power, however, need not lead to a definite disappearance is proved in the recovery of independence by the Balkan peoples: the Greek, Serbs, Bulgars, Roumanians, and more recently the Czechs and the Poles, the Lithuanians, Letts, Esthians, and Finns. Quite apart is the fate of the Jews who are, however, also in the way of regaining a political home in Palestine, although on a comparatively small scale.

(d) The fourth phase in the attitude of the recipient of new cultural stimuli is a "recovery" from the shock of threatened loss of national personality. It is a most marked reaction, for instance, in the demeanor and bearing of the "up-to-date" Japanese, or Hindu. In Africa it is to be noticed particularly among the black proletariat of the South and parts of the West Coast.

Also in Mexico and in parts of Central America an unmistakable national self-consciousness of the native Indians is gaining ground, and an assertion of the cultural individuality is the result.

ad 2. The constitution and tradition of the "accepting people" is an important factor in the procedure of transmission. There are to be considered, (a) the selective process. From the people with whom contact has been established, not everything is adopted. Why does one tribe accept this

kind of object, institution, or belief, and another one choose that? Obviously, a sifting has taken place. One is struck by such selection among East African tribes, who have had, on the average, the same kind of contact with Europeans. Not only is the cultural individuality of each tribe different, but also the momentum of their own traditions, and the circumstances of transmission. The Masai, a purely pastoral people, are in a position quite different from the Wanyamwezi and Wassukuma, who keep poor cattle and work a hard soil on the barren plains. These in turn differ in condition from the Wanyakusa in the fertile highlands north of Lake Nyassa. Even in the relatively small district of the Usambara mountains conditions vary with the three or four minor areas. For instance, in the Vuga district Indian corn is sown and harvested three times a year, in Bumbuli twice a year, but in Mlalu only once a year, the difference being due to the periods of rain as well as to the quality of the soil. In spite of a single harvest a year the fertility is, in Mlalu, so exuberant that it often more than equals the income at Vuga. As a matter of course, each of these conditions presents a different face to European influences. The introduction of an irrigation system, for instance, may bring various results. The small tribe of the Mti, living on a fairly unyielding soil, changed its entire mode of farming by taking to planting potatoes, and have now lived on them for years. Other clans also accepted the cultivation of potatoes introduced by the Bethel Mission but did not shift entirely to this basis of gaining a livelihood.

(b) The rejective process is particularly significant from a psychological point of view. There are always a number of objects and thoughts which are rejected even if a people is prone to accept other things. This rejection points not only to self-assertion but also to the momentum of and dependence on their traditions. For example, in the main Japan and India rejected Christianity. The mode of life of hunting and collecting tribes excludes the adoption of any scheme for more permanent housing. There are mental attitudes and temperaments that make for rejection of a stable life and particularly the caring for animals and crops. The Bergdama, a hunting tribe of Southwest Africa, had even served as keepers of the herds of the Herero, sometimes returning home with their cattle. But on these occasions they simply slaughtered them to eat and never kept to herding and breeding. There seemed also to prevail among them, as also with herdsmen, an aversion to the drudgery of cultivating the soil. The Masai or the Wahehe herdsmen never became agriculturists in spite of their centuries of intimate contact with farming tribes.

The function of these rejective processes becomes important particularly in all cases of more or less forced acculturation, as that of dictators

like Amanullah, Ivan the Terrible, Peter the Great, and Lenin among their own people, or by outside pressure like that of missions, governments, or other instructors. All these rejections, however, may be altered by time. As a matter of fact they are often only the result of untimely collision of social traditions.

The rejective process should be distinguished from the eliminative, which means the replacing of old contrivances or institutions by new ones: as for instance, the spinning-wheel in favor of the modern weaving machinery, the use of carts drawn by horses, in favor of the automobile, the performance of old magic rites in favor of Christian ceremonies, or the loss of the blacksmith's craft in Africa because of the introduction of modern implements.

(c) The transformative process means that, in adoption, this or that selected object, institution, or idea, (1) may acquire a different meaning in the context of the new culture, and, further, (2) even its constitution may be changed. Nordenskiöld¹ in South America has carried on some research in this direction and has secured most valuable material.

As a matter of fact scores of new inventions are only adaptations due to new material, or adjustments to different purposes, which have occurred because of transference to another tribe and consequent change in the cultural texture. Furthermore, these may have been brought about by migrations to regions granting different resources.

An invention or change, it may be noted in passing, is generally traceable to one man, and it must go through a process of social reception by the community, a fact very often overlooked, but recorded in the old saying *Nemo propheta in patria*. Inventions return occasionally to the country of the inventor by having first been adopted abroad, as for instance, in recent times Diesel's engine. A transformation may be functional, as with the previously mentioned Australian boomerang, which becomes a ceremonial object in the New Hebrides and Solomon Islands, or the Sudanese throwing-knife which becomes a ceremonial instrument among Bantu tribes. Or the transformation may be essential, as the harnessing of oxen before a hoe, which is thus transformed into a plough.

ad 3. In cultural contact accidents and events are sometimes of the greatest importance, quite at the outset. Let us cite some of the events of the earliest contact between the English pioneers and the Indians, east of the Connecticut river. "English jurisdiction could not be easily established in a region where the Indian tribes were well organized; and the first English

¹ Erland Nordenskiöld, *Modifications in Indian Culture through Inventions and Loans*. Goteborg, 1930.

settlements were made in those spheres within which native rule had practically disappeared, by (1) the dwindling of the population, or (2) where it was demoralized by tribal wars, or (3) where it was destroyed by English arms. The first condition is illustrated by eastern Massachusetts (both the Bay and Plymouth area), in which a plague had recently destroyed a large percentage of the natives. The second condition existed about Narragansett bay and in Connecticut west of the river where the tribes were so weakened by wars with the Pequots that they welcomed Englishmen as allies. The third condition was the factor that led to the initial settlement of Connecticut, east of the river, and the Pequot war is the event with which the history begins.² From the start the Pequots were hostile to the whites. English traders were killed in 1637; combined forces from Massachusetts and Connecticut, aided by non-Pequot Indians, destroyed villages and crops of the Pequots. There was no rising of Indians until a new generation appeared 1675.

Such circumstances in which transference takes place are of the utmost importance and often instrumental in selecting the institution or idea to be chosen from another people.

It is most fascinating to watch the developments resulting from the attitudes taken by groups brought into contact with one another. There are two possible reactions. The one alternative is the welding together of the groups by the slaying of the men and the abduction of the women. The other alternative is more pacific, since the groups keep apart in the beginning.

In an overwhelming number of cases, as has been pointed out, women or slaves are vehicles for the transmission of civilizatory components. The mere settling together or close by in democratic aggregations does not so much affect cultural texture unless the women are exchanged. As long as stratifications remain purely ethnic each unit preserves its tradition. Then commences the process of reciprocal evaluation resulting in the domination of one over the other. A certain amalgamation of more powerful families with representative clans or families of the inferior stratum concludes in a shifting of the standards of valuation and their control of conduct. The importance of descent is diminished in favor of political and economic influence. Certain families of the superior stratum thus emerge as dominant and gather support on this basis from representatives of other strata. By this departure, the exchange of women goes on between the various strata of the commonwealth, and leads, at least partially, to mutual acceptance of traditions. This is augmented by the establishment of tyrants and dictators,

² History of Population of Connecticut east of the Connecticut River.

who may even have been foreigners. The fact of social gradation replaces the ethnic stratification. It means that the fact of possessing actual power in material values and political influence supersedes power ascribed to descent. The skeletal structure of a graded society persists, whereas the values on which the stratification is based change.

The other alternative is that women agriculturists may be taken by pastoral men and thus give birth to a new culture based upon a merging of the former traditions of each. These circumstances account for the position of women among several tribes, particularly Polynesia and in Africa where, juridically, they are considered almost as slaves, though in practice they may be esteemed and even exercise considerable influence. Also the value of the traditions is generally in some way affected. As a matter of fact the mingling leads very often to an absorption of the one language by the other, the continuous acquisition of women of one ethnic body imposing the mother language on the new generation. The spread of the Bantu language was perhaps due to the acquisition of women of Bantu agriculturists in Africa. Most probably similar events led to the spread of the Chinese language.

Today in Africa and elsewhere the conditions of transmitting European accomplishments and ideas are entirely different. There are various other channels by which the new and foreign flows. The missions, schools, governmental ordinances, control of courts etc., are certainly outstanding factors. But it would be a bias in favor of these formal, intended forces to ignore the influence, equally effective, of the laborer in the plantation, the clerk in the office, and particularly of the houseboy who shares his master's life and home, becomes his intimate, and sometimes his friend. These avenues of influence are mentioned here to match them against the former, and furthermore to show the difference between the intended influences and those incidental but not at all ineffective forces often neglected by the European observer.

Finally we must consider the results of such a clash of cultures. An agglomeration of parts of various clans or tribes may lead to a prolonged sojourn together but without much contact that implies mutual learning. As mentioned above it is striking how little may be acquired from another. In the cases of the Yaunde and the pygmies of the Sangu, of the Kivu hunters and the Ruanda herdsmen, of the Herero and the Bergdama, of the Berber tribes and the Sudanese, and so on, each one kept for centuries exclusively to his own. The same even holds true of parts of larger associations such as castes and guilds, each jealously preserving its own traditions, skills, and customs.

Even nationalities from the many lands of Europe united by the bond of a constitution as in America, remain unamalgamated for generations. This is illuminated by the fact that even in the fold of Catholicism in the United States there are to be found Polish, Italian, Spanish, and French, who all keep their own traditions.

But do all these attitudes persist forever?

We must regard them as passing tides in the stream of changing attitudes described above. There are tides of withdrawal, of assertion of the original traditions, alternating with waves of yielding and almost abandonment to the foreign influence. Such a tide may last for centuries nearly unchanged and impress the onlooker as something permanent.

The peculiarity of modern contact is marked by the special nature of the diffusion and short space of time within which an enormous number of new objects and events overwhelms the bearers of other cultures. The invading culture of today does not so much spread by living together or by exchanging wives, both of which methods require several generations for adjustment, as by the imposing of objects, techniques, concepts (such as Christianity), and by intellectual teaching. The ancient way of transference was imbued with more emotional and biological implications. On the average, we notice among the peripheral peoples of the present a rhythm similar to that we have discussed before, manifesting itself first in a repellent attitude, then being replaced, in many instances, by readiness to adjust to new conditions, and finally superseded by a vindication of the traditional self of the lost culture, as for instance with the cycle of the Japanese within the last century.

By comparing the older process of adaptation with the modern we arrive at an impression of the particularity of the latter. Even that can rightly be judged only by contemplating it as a growing process that never reaches a definite end, but serves as a source for untold new changes ahead.

These adaptive changes contain the core of what is called history. Superficially, political history seems to consist in a number of conflicts that may turn into wars or migrations, and so on. These events, however, show only the climax of innumerable minute processes which indicate what goes on either in social contacts or as the result of internal alterations brought about by inventions.

Viewed from this point our problem is the most essential one of social history.

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ETHNOLOGICAL VALUE OF THE DE SOTO NARRATIVES

By JOHN R. SWANTON

HERNANDO DE SOTO'S expedition through the territory of our Gulf states has always appealed powerfully to the romantic instincts of readers—and makers—of histories. This is owing in part to the glamor which surrounds Spanish exploring and colonizing operations in the New World, enhanced as they were by the relatively civilized character of the populations among which many of them took place. This glamor was in no way diminished by the fact that the French and English who colonized and subsequently conquered most of North America were not in close enough contact with Spain to have a clear understanding of her undertakings, but near enough to be impressed by the huge amounts of gold and silver resulting from them. Then, too, much of the territory penetrated by De Soto was practically unvisited for a hundred and fifty years afterward, and to Englishmen and Frenchmen the country and its people had sunk into obscurity and the story of the enterprise itself had become semi-legendary. The myth-making tendencies of mankind had begun work upon it, every story regarding it that had gotten into circulation was improved upon, and in the region through which De Soto had passed, or was supposed to have passed, any relics of antiquity, even such as were quite aboriginal, became linked with his name or with that of the Spaniards who accompanied him. Popular writers confidently sketched his route on the authority of "oldest residents" or evolved it from their inner consciousness, although there has been no time since 1609 when a substantially accurate account of the expedition might not readily have been consulted.

It was on the date just mentioned that Hakluyt's translation of the "True Relation" of the Fidalgo of Elvas, an anonymous Portuguese gentleman, originally printed at Evora, Portugal, in 1557, made its appearance. Another edition appeared in 1611 and many more have followed. From many points of view it was unfortunate that the least reliable of all of the De Soto chronicles should appear next, before any of those which are so strongly corroborative of the Elvas document came to light. This is the "La Florida" of Garcilaso de la Vega, son of a Spanish officer of the same name by the sister of the last Inca. It appeared in Lisbon in 1605 and in Madrid in 1723. It has never been translated in full but has been reproduced in substance by Theodore Irving, Grace King, and indirectly by Barnard Shipp, who translated Pierre Richelet's French abbreviation, but it has been consulted by many other historians because of the romantic rendering of the material, for when did a defect of this kind ever stand in the way of

popularity? If a set of good stories can become a speech on the tariff, why cannot another set of good stories become a history? However, as we shall see, Garcilaso's work is something better than that.

In 1841 a new source of information appeared in the report of the expedition by Hernandez de Biedma, the king's factor, which had been written in 1544. This is the shortest of all the De Soto narratives. It was first published in English in 1850 and there have been many later impressions. Finally, in 1866, Buckingham Smith called attention to the existence of still another independent narrative, the report of Rodrigo Rangel, De Soto's private secretary, incorporated into Oviedo's "*Historia General*." It has since been used by Shea, Lowery, and other students, and has taken its place as the most reliable and important of all accounts of the famous undertaking. It was based upon a diary and may be regarded as the official narrative. Unfortunately that part dealing with events subsequent to November 2, 1541, when the army went into winter quarters at Utiangue west of the Mississippi, is lost and for the later itinerary we have to rely mainly upon the Elvas document. This latter was evidently based on contemporary notes and is so strongly substantiated at most points by Rangel that we may appeal to it with great confidence. Biedma, in spite of his brevity, is also an important source of information. These three form a group of reliable, mutually supporting, though in minor points mutually correcting, documents which there is every reason to trust.¹

While Garcilaso's chronicle is the least dependable of our four original sources, it is not therefore valueless. Since the appearance, or rather rediscovery, of the journal of Rangel and the triumphant support it gives the Portuguese cavalier there has been a tendency to undervalue the Inca's work as marked as was the earlier inclination to lean over-heavily upon it. The tales which his aged soldier informants related to him were inexact, often exaggerated, but they were not the results of a deliberate intention to deceive. They represent the attempts of old men, unassisted by diaries, letters, notes, or other aids to the memory to recall the events in which they had participated so many years before. In so far as I have been able to check the material it appears to me that the quantitative and associational elements have suffered, while the qualitative elements have survived.

¹ See the Introduction to the *Narratives of the Career of Hernando de Soto*, ed. by Edward Gaylord Bourne (in the *Trailmakers Series*), 2 vols., New York, 1904. Bourne's edition has been used in this paper for the narratives of Rangel, Elvas, and Biedma. For present requirements "*The History of Hernando de Soto and Florida*," by Barnard Shipp, Philadelphia, 1881, though considerably condensed from the original, is a reliable enough rendering of Garcilaso's "*La Florida*," but I have referred when necessary to the original Spanish edition of 1723.

Before undertaking a comparison between the Garcilaso narrative and the rest let me state that, from a careful study of the remaining documents and a check-up of the itinerary by means of topographical and ethnological data, and the investigations of a number of careful students such as Dunbar Rowland in Mississippi, J. Y. Brame in Alabama, and John R. Fordyce in Arkansas, we are able to locate the route of De Soto with almost absolute accuracy in some places, within a mile or two in many others, and are probably never astray at any point as much as fifty miles. We know about where he landed, where he spent his three winters, where his surviving companions embarked, and with almost absolute certainty the names and affiliations of all but a very few of the tribes among whom he passed.

Comparing Garcilaso's narrative with the itinerary as thus established, we may say at once that in broad outlines the route indicated agrees with the facts, and that the tribes, towns, and persons named by him were met in the same approximate places. There are some inversions, misplacements, and misapplications. He says, for instance, that the army passed through Acuera in Florida, on its way to Ocale (Ocaly), while according to Ranjel Acuera lay to one side of the route and was not entered at all. Garcilaso calls the chief of Aguacaleyquen Vitachuco, a name that belongs properly to an Apalachee town, Ivitachuco. While it is wrenched from its proper position, it does appear in the same general region. Another province, under slightly variant names, Achalague and Chalague, is given two different locations, in Georgia and South Carolina, respectively. The town of Quizqui or Quizquiz on the east bank of the Mississippi is called "Chisca," a name which properly belongs to a province, or to provinces, in the north not entered by De Soto but reported to him. The first two syllables of the name Pacaha have been inverted, thus giving rise incidentally to a mistaken identification of Pacaha province with the Quapaw (Ugahpa) tribe. The worst confusion of this kind occurs, however, west of the Mississippi River. It will be remembered that the Spaniards undertook two great expeditions in that territory, one from Casquin (or Casqui), probably near the present Helena, Arkansas, to the neighborhood of the Hot Springs in the same state, the army returning to what is now northeastern Louisiana where De Soto died. Afterward his successor Moscoso, led an expedition through northern Louisiana and eastern Texas, probably as far as Trinity river in hopes of reaching Mexico by land. Finding the country beyond too poor to support them, the Spaniards returned to the town on the Mississippi from which they had set out, built barges there, and finally reached Mexico by sea. Although Garcilaso records these two expeditions, he confuses them to some extent and speaks of visiting two places, Naguatex and Guacane (the

Lacane of Elvas), in the first while we know they were entered only on the second. But when we remember the similar character of the two westward swings, I think this transposition of names by Garcilaso's informants quite easily explained.

As stated above, in giving the general direction pursued by the army there are few mistakes. The ancient military men are not so good in remembering distances and the time taken to cover them. Sometimes the agreement with Ranjel is absolute or very nearly so. Like Ranjel, Garcilaso gives four days as the time taken to go from the province of Mucoco to that of Urribaracuxi (or rather the plain of Guagoco which was near by). He gives eight days between Cofitachequi and Xuala, in exact agreement with Biedma and only one day less than the time recorded by Ranjel. He is in absolute agreement with Ranjel as to the time taken in passing from Guasili (Guachoula) to Chiaha (Iciah), i.e., 6 days, as against Elvas (7 days) and Biedma (4 days). To ascend the Mississippi on its western side from the point of crossing to Casquin (Casqui) he allows 5 days and Ranjel $4\frac{1}{2}$, while Elvas has 3. From Naguatex to Lacane (Guacane) he allows 5 days as does Ranjel, in spite of the fact that he misdates the visit of the army to those towns. In a number of cases besides he differs from Ranjel by only two or three days, but there are also estimates of distance which are much out of the way. He has 3 days as the time taken in going from Ocale to Asile (Ochile) instead of the 17 it actually required, though this is largely due to the fact that he has identified the latter place with a town farther south. However, he states that Chiaha and Acosta (Coste) were 5 leagues apart—about a day's journey—whereas, according to Ranjel, it took 5 days to pass from one to the other. He says they were 23 or 24 days in reaching Coça from Acosta, but Ranjel and Elvas agree in giving only 8. On the other hand, Garcilaso represents the passage from Coça to Talisse as having required only 5 days, while Ranjel enumerates 12 and Elvas approximately the same number. Garcilaso also underrates greatly the time taken in going from the latter place to Mauvila. He represents 7 days as having been consumed between Mauvila and the Chickasaw town, just half of the time given by Ranjel who is again supported by Elvas. But if, as is supposed, Garcilaso's figures are drawn from the unaided memory of a soldier (or soldiers) repeating experiences more than forty years after the events described, their mistakes are less surprising than the number of times they are correct.

The worst blunders we discover are in estimates of the number of Indians encountered in various places and in the size of towns. Thus Garcilaso says there were 600 houses in Ocale (Ocaly), 200 in Vitachuco (Aguacaleyquen?), 200 in Ossachile, 500 in Coça 200 in the Chickasaw

town, 500 "good houses" in Pacaha (Capaha), 300 in Guachoya, 400 in Anilco, and 200 in Aminoya. These figures can hardly be accepted unless we count in corncribs and other outbuildings. And certainly we must take exception to the size of the 80 Mauvila houses, each of which is said to have been capable of holding 1000 to 1500 men and none less than 600, and to the dimensions of the Temple of Talomeco, 100 paces by 40.

Again, Garcilaso tells us that the number of Spaniards who embarked from Havana on the expedition was 1000, not counting sailors, whereas Ranjel says 570. Later on Garcilaso tells us that nearly 1500 Spaniards wintered in the province of Apalachee and that they had 350 horses, though only 250 were landed in Tampa bay. Elvas tells us that, at the town of Napetaca in Florida, 400 Indians attacked the Spaniards in order to rescue the chief of Aguacaleyquen (or Caliquen), but Garcilaso's informant has expanded the number to 10,000. He says they were menaced in Acosta by 1500 Indians, but his most extravagant estimate is his enumeration of the Indians killed at Mauvila, 11,000. The figure given by Ranjel is 3,000 and that by Elvas 2,500. Subtractions are also called for in the cases of the 1600 Indians who disputed the passage of the River of the Chicksaw, the 4,000 at Ft. Alibamo, and the 15,000 to 20,000 who watched the cross-raising ceremony in the town of Casqui.

But these last are Garcilaso's worst offences, and when he is dealing with small detachments of troops and moderate-sized groups of Indians he is fairly reliable. Beyond this, when we compare the various episodes of the Inca's narrative with those recorded by the better authorities, we find that there is usually valid ground for the statements made though the order of events and their relation to one another may have been disordered.

Turning to items of ethnological interest, we find some that may be checked up, some more difficult to handle. It is necessary for us to examine the former in order to treat the latter intelligently and know how much reliance may be placed upon them.

A part of one short chapter of "La Florida" is devoted to the customs of the people of Florida. The characterization of temples contained in this, references to punishment for adultery, references to the manner of life of the inhabitants in general, the description of their clothing, and most of the other items are substantiated by our present knowledge of the region. Garcilaso's repeated mention of a sun and moon cult is, without doubt, an importation of Peruvian beliefs into the Southeast, and the same is probably true of the distinction he draws between first and later wives in polygamous households. His description of the method of manufacturing bow-

strings may be another case of the kind as there seems to be no parallel to it in the Gulf section.

Minor items bearing on native life are scattered through the narrative and very few of these suggest anything inappropriate to the region. Thus we have mention of corn, beans, pumpkins, and dried fruits, evidently persimmons, as staple articles of diet; bridges across marshes and small streams; use of stockades; litters for the principal chiefs; use of rafts and dugout canoes, the latter with awnings at the stern for the leading men; extensive use of pearls (though much exaggerated as to quantity); cane and flint-pointed arrows; limited use of copper; wooden boxes for the dead, cane basketry; plumed headdresses; cloaks of vegetable fiber; drums and flutes; palmetto- and grass-covered houses; use of fire-arrows; salt trade between western Louisiana and the Mississippi river country; head deformation.

A few of the customs and artifacts mentioned are noteworthy because they are of a kind not easily imagined and agree perfectly with later information. One was the device recorded two or three times, and also mentioned below, of cutting the cords on the insteps and at the heels of prisoners taken in war so that they could not run away when set to work in the fields. Almost the same thing was observed by Lawson over a hundred and fifty years later.² When Tuscaloosa awaited the approach of De Soto he was seated upon a stool made of a single block of wood. Seats of this kind were found in the West Indies but were rare in our Gulf region, yet they are described by Du Pratz and Adair. Next we may note the peculiar reverence shown chiefs and the custom of killing servants and members of the family to accompany a prominent man into the world of spirits. Garcilaso's informants observed this in the very section on the Mississippi later occupied by tribes having the same customs, the Taensa and Natchez. The following characterization of Indian warfare will be recognized by those familiar with it as giving a relatively fair picture of the institution:

The Indians of one province do not fight those of another through any unruly ambition to seize upon their country, nor raise an army to deliver battle. They only lay ambuscades for one another, and plunder while fishing and hunting; in a word, everywhere where they meet with an advantage. They also sometimes kill and sometimes take prisoners, but of those who are taken, some are exchanged for others, and the rest remain slaves, the tendons of the instep of one of whose feet they cut, in order to prevent them from escaping. And if, by chance, war suddenly breaks out, they lay waste the lands of their enemies, set fire to the towns and retire.³

² John Lawson, *Hist. Carolina*, Raleigh, 1860, pp. 322-323.

³ Barnard Shipp, *Hist. of Hernando de Soto and Florida*, p. 433.

The one striking omission, of course, is all reference to the torture and burning of prisoners. We know that it occurred in the region because Ortiz was threatened with death by fire and the Alabama Indians indicated in pantomime that that was how they intended to treat the Spaniards. The omission is perhaps due in part to the unwillingness of Garcilaso, himself part Indian, to lay stress on Indian barbarities, but I am inclined to think it indicates that much of this cruelty was of later introduction.

The severity with which adultery was punished among the Creeks and their neighbors struck Garcilaso's informants as forcibly as it did later explorers, and he devotes a chapter to it. It is significant that, though the custom of killing adulteresses with arrows which he describes as a current usage among the Indians of Tuscaloosa had disappeared by the eighteenth century, James Adair's informants related it as a former custom well known to them.⁴

The greatest importance of the preceding discussion seems to me to be its bearing on the validity of two chapters in the work under discussion which deal with the mounds and temples of the Southeast, since these more than any others give us an idea of the culture of the section and pave the way for an intelligent archaeological examination of it. Commenting on the house of the chief of Ossachile in peninsular Florida, our author says:

The Indians endeavor to place their towns upon elevated places. But because, in Florida, they rarely meet with this sort of place where they can find the necessary conveniences to build, they raise themselves eminences in this manner. They choose a place where they bring a quantity of earth which they elevate into a kind of platform, two or three pikes high, the top of which is capable of containing ten or twelve or fifteen or twenty houses to lodge the cacique with his family and all his retinue. They then trace, at the bottom of this elevation, a square place conformable to the extent of the village which they would make; and around this place the most important persons build their dwellings. The common people lodge in the same manner; and thus they all environ the house of their chief. In order to ascend to it they draw, in a straight line, streets from top to bottom; each one fifteen or twenty feet wide, and unite them to each other with large posts, which enter very deep into the earth and which serve for walls to these streets. Then they make the stairs with strong beams which they put across, and which they square and join in order that the work may be more even. The steps of these stairs are seven or eight feet wide, so that horses ascend and descend them without difficulty. However, the Indians steepen all the other sides of the platform, with the exception of the stairs, so that they cannot ascend to it, and the dwelling of the chief is sufficiently strong.⁵

⁴ James Adair, *Hist. Am. Inds.*, p. 141.

⁵ Ship, *op. cit.*, pp. 300-301.

There are enough flat-topped, steep-sided mounds with ramps in the Southeast to confirm all of this, except perhaps the dimensions given and the use of retaining timbers. If the employment of the latter should be confirmed, it would establish an additional point of resemblance between the pyramidal earth mounds and the stone-faced structures of the Maya. At least Garcilaso furnishes us with pretty definite proof, if any more were needed, that mound-building was a current, and not an extinct, industry in the Gulf region.

Most difficult of credence of all the tales with which Garcilaso's old soldier friends regaled him is their description of the temple of Talomeco. He devotes two and a half chapters to this, after forewarning the reader that it was so magnificent that he despaired of conveying an adequate idea of it. Restraint would, of course, be more welcome to ethnologists and archeologists than elaboration, and because this description lacks restraint it has usually been left entirely out of consideration in any attempt to draw a true picture of the culture of the section.

Talomeco was close to Cofitachequi which, when the Spaniards visited it, was the principal settlement and the residence of the head chief - or as it happened chieftainess - of a group of towns which was probably the nucleus of the body of Indians known to later history as Lower Creeks. Elsewhere I have given reasons for identifying Cofitachequi with the later Creek town of Kasihta.⁶ It may have been Coweta rather than Kasihta, but that was also a leading Lower Creek town. The names Cofitachequi and Talomeco certainly come from a Muskogean dialect, and Talomeco, or Talimeco as Ranjel has it, is from the Creek language proper, or Muskogee, with scarcely a shadow of a doubt. It is from *talwa*, "town," or "tribe," and *immiko*, "chief to it," or "chief to them," a name corresponding perfectly with the headship assigned the place by De Soto's native informants, though that headship had apparently been lost two years before through the destruction of its people by a pestilence. It might, of course, have been a non-Muskogee town with a Muskogee name, and we have a close analogy in the Hitchiti-speaking town of Apalachicola which the Creeks called *Talwa lako*, or "Big Town." In later historic times, however, the Hitchiti towns were never as populous as Kasihta or Coweta, and when De Soto passed through this country there is evidence that the two peoples were separate and at war. The name Ocute was probably a synonym for that of the Hitchiti tribe, and Toa or Toalli the later Hitchiti-speaking town of Tamali, while Altamaha is known to have been the name of the head town

⁶ BAI-B 73 216, 218.

of the lower Yamasí who are believed to have used the Hitchiti tongue.⁷ These were grouped by themselves and were at war with Cofitachequi. Moreover, Ilapi, a village near Cofitachequi, was probably the later Creek town of Hilibi, though it subsequently settled among the Upper Creeks.

In another place I have expressed the opinion that Cofitachequi was somewhere near Mount Pleasant, South Carolina,⁸ but from the Pardo narratives it is clear that it was below the present Augusta, Georgia, at, or not far from, Silver Bluff, the place assigned it by most earlier investigators. In this case the traditional view appears to be upheld. We know that Talomeco was close by, Garcilaso says only a league away.

For the present discussion it is quite essential to have an accurate rendering of Garcilaso's description of the Talomeco temple and, therefore, instead of copying Shipp, I here make use of a translation originally prepared for the Bureau of American Ethnology by Dr. E. Furman which I have revised by means of the Madrid edition of Garcilaso's work printed in 1723.

The temple . . . was large, being more than 100 paces long by forty wide. The walls were high, the proportions conforming to the size of the interior. The roof extended up high and had a steep pitch, for as they had not arrived at the invention of tiles, it was necessary to raise the roof high enough to prevent the rain from inundating the building. The roof of the temple was made of reed grass (rushes) and canes, slender and split through the middle, of which these Indians make very neat and very well woven mats like those of the Moors, which, when four, five or six of them are laid one over the other, form a roof both outside and inside, beautiful and serviceable, through which neither the rays of the sun nor water can pass. From this province onward the Indians for the most part do not use straw for roofing and covering their houses, but cane matting.

Upon the roof of this temple there were placed in order many large and small shells of different aquatic animals. I do not know whether they had brought them inland or whether they live in the numerous and important rivers that run through it. The shells were arranged with the insides turned outward on account of the greater lustre. Among them and in the same order were many large turbinated shells from the sea. Between the conchs and other turbinated shells there were spaces left for each was placed in systematic order. In these spaces were great strands of beads, some of fine and others of rough pearls, about half a cubit long, which were suspended from the roof, descending step by step, so that where some beads terminated others commenced, and when the sun shone on them the sight was beautiful. With all these things was the temple covered on the outside.

To go inside great doors were opened of a size proportionate to that of the tem-

⁷ *Ibid.*: 95, 97, 174-175, 181.

⁸ *Ibid.*: 218-219.

ple. Next to the door stood twelve gigantic figures carved in wood, counterfeiting life and with ferocious looks and boldness of posture, so that the Spaniards before passing on stopped to admire them for some space of time, wondering that they should find in a barbarous country, works which, if discovered in the most famous temples of Rome, at the height of its power and government, would be held in high esteem for their size and perfection. The giants were posted as if guarding the doors, defending the entrance against such as were not permitted to go in.

Six of them were on one side of the entrance and six on the other, one behind the other in descending order from the greatest to the least. The first were 4 varas (yards) high, the second something less, and so on to the last.

They had different arms in their hands according to the size of their bodies. The two first, one on each side, being the largest, held war clubs garnished on the hinder part with diamond points and strips of copper made neither more nor less like the clubs with which Hercules is armed (as painted), making it appear that the one was copied from the other. The giants held their clubs lifted up high with both hands with ferocious looks and boldness (as if threatening such as would enter the doors), and inspiring terror.

The second one on each side, (which is the order all maintained), held broadswords, carved from wood of the same shape as those made in Spain of iron and steel. The third carried staffs, different from the clubs, being of the shape of the clubs used in beating flax, about a cubit and a half long, very stout for the first third and narrowing little by little until they diminished to a stick.⁹ The fourth giants in order carried great battle-axes proportioned to the size of the figures. One of them was armed or pointed with brass. The knife was large and very well made, the other part being finished with 4 angles [i.e. square in cross section], one quarter of its length. The other axe had another kind of point neither more nor less, which excited great admiration; it was made of flint.

The fifth in order carried long bows on their persons, they were drawn to the head with arrows in place as if ready to shoot. The bows and arrows were curiously finished with as great art and preparation as the Indians are capable of, the point of one of the arrows was of deer horn worked in 4 points, the other arrow carried a point of flint of the same shape and size as an ordinary dagger.

The sixth and last carried very large and handsome pikes armed with copper. All of them like the first seemed to be threatening with their arms to wound any person who sought to enter the doorway. Some were posted so as to wound from above downwards as those with war clubs; others with points like those with broadswords and picks; others for cutting as those with axes; others for hitting on the back as those with staffs or canes, and the bowmen threatened all who were at a distance; every one of them standing in the most bold and fierce posture as required by the arms which they held in their hands. And what was most admired by the Spaniards was to behold how lively and natural the whole was made.

⁹ Cf. Wm. Strachey on the swords of the Virginia Indians, *Hist. Trav.*, London, 1849, p. 106.

The upper part of the temple along the high walls was ornamented, as was the roof outside, with turbinate and other shells placed in rows, and between them strings of pearls both fine and rough suspended from the roof and reaching to the ground. Between the strings of beads, turbinate shells and conchs, there were placed plumes made of different colored feathers, similar to those they made to wear. Besides the strings of fine and rough pearls extending along the roof and besides the feathers which were fastened to it, there were other large plumes and strings of coarse and fine pearls strung on slender threads of a dull color, which, being invisible, made it look as if the strands and the plumes stood out in the air, some above the others appearing as if falling from the roof. In this way were the upper part of the temple walls adorned, being very agreeable to behold.

Lowering their eyes from the roof our captains and soldiers saw that from the uppermost part of the four temple walls there passed along two rows of statues, one above the other, representing men and women of the ordinary size of the people of this country who grow large. Each stood on its own base or pedestal, and they were in a line one after the other, serving no other purpose than as ornaments to the walls, as they were uncovered from above downward and were without tapestry. The male figures carried different kinds of arms of the kinds we have enumerated. They were garnished with rings (bracelets?) of coarse and fine pearls, each of four, five or six strands, and to add to their beauty they had at intervals a border of the finest colored threads, so that the Indians furnished them with extremely fine examples of everything of which they themselves were fond. The statues of the women carried nothing in their hands.

Along the ground, arranged against the walls, resting on benches of wood, which were very well made, as was everything in the temple, stood the chests which served for burial purposes, in which rested the dead bodies of the chiefs who had been lords of that province of Cofachiqui, their children, their brothers, their nephews, sons of brothers, for in that temple none others were interred.

The chests were well covered with their own mantles. About one yard (*vara*) above each chest stood a statue carved out of wood arranged on its pedestal against the wall, the same being a portrait to the life of the dead man or woman who was in the chest and representing the age at the time of death. These likenesses served to recall the events of their past lives. The statues of the men held arms in their hands but the women and children were without any.

The space of the wall between the images of the dead and of the statues on the upper part of the wall was covered with shields and large and small bucklers made of cane so closely woven that a dart shot from a cross-bow or a shot from an arquebus would scarcely pass through. The shields and bucklers were encircled with strings of fine and coarse pearls and round the edge were entwined colored threads, which added much to the appearance.

On the floor of the temple at intervals there were placed on benches three rows of wooden chests, large and small, one above the other, the larger being placed first, and on these other smaller ones, and then others still smaller, and thus were arranged

four, five or six chests one over the other from larger to smaller in the form of a pyramid. Between the rows of chests there were paths reaching all over the temple, crossing from one side to the other so that without any hindrance one might pass over every part of the temple and see what there was every where.

All of the chests, great and small were full of fine and rough pearls. These pearls were classified and put into the chests according to their sizes, so that the larger pearls were in the larger or first chests and those not so large in the second, others smaller in the third and thus from size to size to the seed pearls and these were contained in the smaller chests above. In all of these there was such a vast quantity of coarse and fine pearls that the Spaniards confessed, after the view they had, that what the Señora had spoken with regard to this temple and cemetery was all true without boasting or exaggeration, and though all of them should lade themselves, being more than nine hundred men, and likewise load the more than three hundred horses, they would be unable to carry away the stock of coarse and fine pearls contained in this temple. Nor should much wonder be entertained at such a quantity of pearls, if it is taken into consideration that these Indians never sell any of the quantities they find, but all are brought to the cemetery, and that they have done so for many ages past. And for comparison's sake, it may be affirmed, for it is seen every year, that if the gold and silver which was drawn from Peru and carried into Spain had not been plundered it would have sufficed to cover many temples with roofs of silver and gold.

With all this bravery and riches of pearls there was in this temple, there were likewise many large bales or bundles of deerskins, white or dyed of various colors, arranged according to the shade. Moreover there were many packs or parcels of many-colored dresses made of deerhide, also a great multitude of fur dresses adorned with their own fur, of all sorts of animals which live in that land, both great and small. There were also many cloaks and mantles of wild cat skin of different kinds and shades of color, others of fine marten skin the whole of which were dressed, so that none in Germany or Muscovy could be found better.

From all these things and the order in which, as has been said, they were arranged in the temple, as well on the roof as the walls and the floor, every thing was placed with such great neatness and order one would imagine this nation to be the cleanest in the world. Everything was kept clean without dust or cobwebs, whence it appears that much people was required to perform these functions and keep up the service in the temple, keeping it clean and everything in its place.

Around about the temple there were eight halls, separated one from the other, arranged in order and in line. They were annexes to the temple for its ornament and its service. The Governor and other cavaliers desired to see what they contained and found that they were all filled with arms arranged in the order we shall narrate.

The first hall (or apartment) which they happened to inspect was filled with pikes, nothing else being present—all very large, well made and armed with brass tips of such a bright color that they seemed to be of gold. All of them were garnished with rings of coarse and fine pearls, carried three or four times round and properly

spaced along the staffs. Many of them were provided at the middle part where it falls upon the shoulders and at the armed point with sheaths of colored buckskin and at the edges of these, in all parts high and low there were fringes of colored threads, with 3, 4, 5 and 6 strands of strings of fine and coarse pearls which added greatly to their handsome appearance.

In the second hall was contained only war clubs such as we have said were carried by the first giants standing in the doors of the temple, except that those in the hall, like the arms in the wardrobe of the chief, were garnished with rings of coarse and fine pearls and fringes of various colored threads, at short distances so that one color would contrast with another and all with the pearls. The other pikes of the giants had no ornamentation.

In another hall, which was the third, were contained only axes such as we have described as being carried by the giants of the fourth rank or order, armed with copper points, one end being the blade and the other a diamond point six or eight inches long. Many of them were armed with flints fastened securely to the handle by rings of copper. These axes had along their handles, strands of pearls and fringes of colored threads.

In another hall, which was the fourth, there were broadswords made of various hard woods such as those held by the giants of the second order, all garnished with strings of pearls coarse and fine, and with fringes for the handles and the blades for the first third of their length.

In the fifth hall there were only staffs such as we have said were carried by the giants of the third rank, but garnished with strands of fine and coarse pearls and fringes of colored threads along the handle up to where the staff proper begins. . . .

In the sixth hall were found only bows and arrows finished in the most curious and perfect style. They were armed with wooden points, bones of land and sea animals and with flint such as we have said slew the Indian Cavalier. Besides these forms of arrow points there were some of copper such as in Spain we fix to the ends of darts. Others like harpoons of the same metal, small chisels (celts), small lances, Moorish darts looking as if they had been made in Spain. Among the arrows, which were pointed with flint, we remarked that in form they differed considerably among themselves. Some had the shape of a harpoon, others of a chisel, others were round like a punch, others with two ridges like a dagger point. All of these caused much admiration among the Spaniards who looked at them curiously especially that they should be able to manufacture such articles as these, considering the hardness and difficulty of shaping flint. Remembering also what is said in Mexican History concerning the broadswords and other weapons which the Indians of that country make out of flint diminished part of the marvel of those before them. The bows were finished elaborately and painted of various colors which they lay on with a kind of pitch giving them a luster, so that one may see objects in them. Speaking of this temple Juan Coles uses these words: "In one apartment there were more than 50,000 bows with their quivers full of arrows." Besides the lustre of the paint the bows had a great many strands of coarse and fine pearls twisted round them at equal

spaces, which strands or rings, beginning at the handles, proceeded along the whole length to the points in such a manner that the first rings were of very thick pearls and of seven or eight strands, the second were smaller pearls and the strands fewer, proceeding in this order until reaching the last which were very diminutive rough pearls. The arrows had, however, rings of small rough pearls but no large ones.

In the seventh hall there was large store of shields made of wood and covered with bull hide brought from distant countries, all of them ornamented with various kinds of coarse and fine pearls and fringes of colored threads.

In the eighth hall there was a large quantity of bucklers made of cane woven with much neatness and so strong that but few cross-bows would be found among the Spaniards which could send a dart through them, an experiment which was made in other places at a distance from Cofachique. These bucklers, however, were ornamented as usual with strings of coarse and fine pearls and fringes of colored threads.

With all these arms, offensive and defensive, the eight halls were filled and in each one of them there was such a quantity of that kind of weapon that the Governor and his Spaniards greatly admired the number of them, besides the neatness and skill displayed in making them and arranging them in order.

The general and his officers having seen and noted the greatness and sumptuosity of the temple with its richness and the immense store of arms together with their ornaments and the system with which everything was arranged inquired of the Indians what this great and solemn display signified. They answered that the lords of that kingdom and chiefly of that province and of others which we would see further on did it all to show the grandeur, the sumptuousness and ornaments of their funerals, and constantly went on accumulating weapons and riches, all they could get, as we have been shown in this temple. And because it was the most wealthy and exalted of all those seen by our Spaniards in Florida, it seemed proper to me to write so extensively concerning it and particularly of the things which were in it. Likewise he who has given me this relation has informed me of it also as being one of the things, as he said, of most grandeur and admiration of many objects he had seen in the New World, having travelled through the greater part of Mexico and Peru, although it is true when he passed through those two kingdoms their most precious wealth had been carried off and appropriated to the use of their Majesties.¹⁰

Unless one's acquaintance with the culture of the Southeast is more than casual, his first tendency on reading this account is to dismiss it altogether. Exaggerations are clearly in evidence, particularly in Garcilaso's preposterous assertions regarding the number of pearls which the temple contained, to say nothing of Coles's 50,000 bows, both of which figures require vigorous pruning. The same criticism must also be made of the dimensions of the main edifice and its storehouses and probably of the images and other furnishings. But after we have done this and turn to consider the things them-

¹⁰ Garcilaso de La Vega, *La Florida del Inca*, pp. 130-134. Madrid, 1723.

selves our judgment must be different. While Elvas and Biedma have nothing to say of this temple, its existence is confirmed by the best of our authorities, Ranjel:

In the mosque, or house of worship, of Talimeco there were breastplates like corselets and head-pieces made of rawhide the hair stripped off, and also very good shields. This Talimeco was a village holding extensive sway; and this house of worship was on a high mound and much revered. The *cancy*, or house of the chief, was very large, high and broad, all decorated above and below with very fine handsome mats, arranged so skilfully that all these mats appeared to be a single one, and, marvellous as it seems, there was not a cabin that was not covered with mats.¹¹

This also establishes the importance of the temple, and confirms Garcilaso's informants in part in showing that it was a repository for native rawhide armor and shields, though it does not say that these were in separate storehouses. Although nothing is said directly about the structure of the temple, we are given to understand that it was made of mats like the dwelling of the chief, especially "since there was not a single cabin that was not covered with mats." Moreover, this was the precise structure of the temples of the Natchez, Taensa, Acolapissa and other tribes along the lower Mississippi as known from records made a hundred and fifty years later. Other features which the temple of Talomeco shared with these were the benches around the walls inside and the chests or hampers upon them holding bones of former chiefs.

The "brass" mentioned was copper unless it was metal obtained from the Ayllon colonists, and the diamond points were probably crystal.

Not many pearls were noted by explorers in the Mississippi temples, but by their time it is possible the natives had discovered it was advisable to keep such things out of sight. It is well known that pearls were held in esteem there for we learn that children belonging to the Natchez Sun caste wore some of these about their necks from birth until they were ten years old, and that when they were not so used they were kept in the temple.¹² Moreover, our other authorities for the De Soto expedition agree that great numbers of pearls were found at Coñitachequi even when they do not connect them with the temple in question. The chieftainess of that province when she came to meet De Soto wore a necklace consisting of several strands of pearls. Biedma tells us that from the temple of Cofitachequi, corresponding to that of Talomeco, the Spaniards took

a quantity of pearls of the weight of as many as six arrobas and a half, or seven

¹¹ Narr. of De Soto, II, pp. 101-102.

¹² BAL-B 43.56.

[150-175 pounds], though they were injured from lying in the earth and in the adipose substance of the dead.

Elvas says that they found in Coñitachequi, evidently in the temple, "three hundred and fifty pounds' weight of pearls, and figures of babies and birds made of them," and he quotes the lady of Coñitachequi as informing De Soto that if he chose to send to the sepulchers in the vacant towns about, which had been decimated by a pestilence, "he might load all his horses with them," a boast almost rivaling the story told by Garcilaso's friends. He also says that, when she was carried along by the Spaniards after they left her town, she took with her "a cane box, like a trunk . . . full of unbored pearls." In his version of the story Ranjel gives the quantity of pearls taken from the temple of Coñitachequi as "some two hundred pounds," and he adds the important information that they found "the breasts, belly, necks and arms and legs" of the corpses laid away there "full of pearls." The chieftainess's remarks come still nearer suggesting Garcilaso's pearl story for she is made to say to the Spaniards: "Go to Talimeco, my village, and you will find so many that your horses cannot carry them."¹³ Perhaps these words may have given our cavaliers the basis for their own tale, such is the power of suggestion. In 1628 a Spanish officer named Pedro de Torres visited Coñitachequi and reported that its rivers abounded in pearls.¹⁴ Strachey tells us that the Virginia colonists found numbers of them in the sepulchers of the chiefs.¹⁵ Finally, we must not forget the quantities of pearls discovered in some of the Ohio mounds, such as those of the Hopewell, Seip, and Turner groups. Indeed, the quantity reported from Coñitachequi, coupled with the relatively small number discovered along the lower Mississippi suggests that possibly there may have been a closer trade connection between the Savannah and the Ohio country than between the latter and the lower Mississippi.

Other features of the temple of Talomeco not conspicuous along the Mississippi, if indeed existent, were the wooden statues and the store houses, and the only thing to suggest the wooden giants about the portal is those "most pleasing and best executed grotesque figures" which were at the entrance of the Houma temple near the mouth of Red River.¹⁶ In another direction, however, we find something analogous to both store houses and statues and that is toward the north. Lawson, and, at a much earlier

¹³ Narr. De Soto, I, pp. 60, 71, II, 14, 100-101.

¹⁴ BAE-B 73 220.

¹⁵ Strachey, *op. cit.*, p. 132.

¹⁶ BAE-B 43 288.

day, Peter Martyr, tell us of wooden images of ceremonial import among the Siouan tribes, but the Virginia writers give us the most striking parallels. Smith says:

Upon the top of certaine redde sandy hills in the woods, there are 3 great houses filled with images of their kings and Divels and Tombes of their Predecessors. Those buildings are neare 60 foot in length, built arbor wise, after their building¹⁷

More significant is his description of Powhatan's treasure house:

A mile from Orapakes in a thicket of wood, hee hath a house, in which he keepeth his kind of Treasure, as skinnnes, copper, pearle, and beades. which he storeth up against the time of his death and buriall. Here also is his store of red paint for ointment. and bowes and arrowes. This house is 50 or 60 yards in length, frequented only by Priestes. At the 4 corners of this house stand 4 Images as Sentinels, one of a Dragon. another of a Beare, the third like a Leopard, and the fourth like a giantlike man; all made evill favoredly, according to their best workmanship.¹⁸

Strachey expands and explains as follows Smith's reference to the three houses on "certaine redde sandy hills":

Their principall temple, or place of superstition, is at Vtamussack, at Pamunky. Neere unto the towne, within the woods. is a chief holie howse, proper to Powhatan, upon the top of certaine red sandy hills, and it is accompanied with two other sixty feet in length, filled with images of their kings and devills, and tombes of the prediccors. This place they count so holy as that none but the priests and kings dare come therein.¹⁹

Regarding their temples in general he has this to say:

In every territory of a weroance is a temple and a priest, peradventure two or three . . . for whome they have their more private temples, with oratories and chauncells therein, according as is the dignity and reverence of the Quiyoughquissoc [for priest], which the weroance wilbe at charge to build upon purpose, sometyme twenty foote broad and a hundred in length, fashioned arbour wyse after their buylding, having comonly the dore opening into the east, and at the west end a spence or chauncell from the body of the temple, with hollow wyndings and pillers, whereon stand divers black imagies, fashioned to the shoulders, with their faces looking downe the church, and where within their weroances, upon a kind of beere of reedes, lye buried; and under them, apart, in a vault low in the ground (as a more secrett thing), vailed with a matt, sitts their Okeus, an image ill-favouredly

¹⁷ Narrs. of Early Virginia, New York, 1907, p. 109. Mr. C. C. Willoughby in his chapter in Moorehead's "Exploration of the Etowah site in Georgia," has but recently called attention to these same resemblances.

¹⁸ *Ibid.*, p. 114.

¹⁹ Strachey, *op. cit.*, p. 90.

carved, all black dressed, with chaynes of perle, the presentment and figure of that god (say the priests unto the laity, and who religiously believe what the priests saie) which doth them all the harme they suffer, be yt in their bodies or goods, within doores or abroad.²⁰

Beverley writes at a later date:

The *Indians* have Posts fix'd round their *Quioccasan* (temple), which have Mens Faces carved upon them, and are painted. They are likewise set up round some of their other celebrated places, and make a Circle for them to dance about, on certain solemn occasions.²¹

These carved posts were not inside the house, as was the case at the temple of Talomeco but at some distance outside, as appears from Beverley's description of the temple of which he made a personal—and not altogether reverent—examination. This temple

was about eighteen foot wide, and thirty foot long, built after the manner of their other Cabbins, but larger. . . . Round about the House, at some distance from it, were set up Posts, with Faces carved on them, and painted.

At the farther end of this building they found a mat partition cutting off a space of about ten feet and back of this they found some shelves and upon these, wrapped in mats, human bones, some tomahawks, and a wooden image made in sections.²² In another place he describes the manner in which the body of a chief was laid away upon a shelf and tells us that a wooden image was set up near by to guard it.²³

Masks and other carvings in wood have been found in more recent years in Florida.²⁴ In brief, most of the features of the temple of Talomeco had correspondences elsewhere. The only details which seem to be missing are the shell ornamentations on the roof, and perhaps the human figures at the doorway and the variety of weapons carried by them. Yet the existence of these is not improbable and certainly it is not disproved. In my judgment the description of this temple, like the rest of the Garcilaso narrative, represents an attempt to tell a straightforward story and contains material of value to the ethnologist and the archeologist.

As De Soto made it his primary object to search out the largest and most civilized tribes, the chronicles of his expedition give a very good picture of the status of the mound-building cultures of the Gulf region in the

²⁰ *Ibid.*, pp. 82–83.

²¹ Robert Beverley, *Hist. of the Present State of Virginia*, London, 1705, p. 45.

²² *Ibid.*, pp. 28–30.

²³ *Ibid.*, p. 47.

²⁴ By Cushing at Key Marco; also see Fewkes in SI-MC 80, no. 9.

first half of the sixteenth century. When they were not gathered into stockades for fear of enemies, he found the peoples he visited living in towns consisting of rather widely extended neighborhoods, about as they were at the end of the seventeenth century: Near the center of each town was an open place or public square about which were one or more public buildings, usually on mounds. In certain cases there are said to have been mounds with no buildings upon them but more often there was at least one mound surmounted by a public building and often we find two such mounds, one with a so-called temple upon it and one bearing the chief's house, the square or plaza lying between them. We may summarize the information which the chronicles give regarding these squares, grounds, and public buildings, and their distribution as follows:

Squares are reported in the following towns: Napetaca, Uriutina, and Ocale in the present Florida; Achese in southern Georgia; Athabachi and Mauvila in Alabama; Chickasaw in northern Mississippi; Anilco and Guachoya in northeastern Louisiana.

Mounds are reported in: Ucita in Florida; a town near Ichisi in Georgia; Talimeco in South Carolina; Guachoula in western North Carolina; Athabachi and Mauvila in Alabama, Quizqui (Chisca) in northwestern Mississippi, Casqui and Pacaha in Arkansas; Anilco in Louisiana.

Temples of the ossuary type were found in: Ucita, in the towns near Coftachequi, at Coftachequi, and at Talimeco in Georgia and South Carolina, that at Talimeco being upon a mound, at Pacaha, at Anilco, the towns near Anilco, and at Guachoula.

Chiefs' houses are mentioned at Ucita, Ossachile, Talimeco, Guachoula, Quizqui, Casqui, Anilco, and Guachoia, all of which were on mounds except possibly that of Casqui which is said to have had a mound near it. The elevation upon which stood the chief's house at Talimeco was not certainly artificial.

When the French and English settled permanently in this territory in 1670-1730 squares or plazas were found throughout the section; mounds were well known to the Cherokee, Chickasaw, Creeks, Natchez, Tunica, and Caddo, temples or their equivalents existed among the Cherokee, Creeks, Chickasaw, Natchez, Taensa, Tunica, Grigra, Houma, Acolapissa, Bayougoula, Mugulasha, and Caddo, and among the Creeks, Natchez, Tunica, Caddo, and probably the Chickasaw these were on mounds. Chiefs' houses are not as prominent except among the Natchez and Taensa, and that of the Natchez chief was on a mound. The Creek arrangement was somewhat different in that for the temple and the house of the chief were substituted the winter and summer ceremonial buildings.

CONCLUSIONS

The information which the several chroniclers of the De Soto expedition have preserved to us is of great value for an understanding of the cultures of the mound-building tribes in the Gulf region and an intelligent approach to the archaeology of the section. While the narrative of Rodrigo Ranjel, De Soto's private secretary, is the most reliable, those of the Fidalgo of Elvas and Hernandez de Biedma are almost equally trustworthy. The long account prepared by Garcilaso de la Vega, while inaccurate in many particulars and at times given to wild exaggeration, was compiled with honest historical intent and preserves a knowledge of certain cultural features of the region not recorded elsewhere and of considerable importance.

As De Soto's object was to locate civilized peoples abounding in wealth, he passed through the most highly developed part of the mound area of the Southeast when the building of mounds was still active though it was probably past its meridian by some centuries. There is evidence that the cultures of which it was the expression had already retreated from northeastern Arkansas, but whether this also involved the upper Mississippi and the Ohio remains unrevealed.

One other suggestion is, I believe, worth making. As we have seen, the temple of Talomeco combines features found in sacred edifices along the lower course of the Mississippi with features of similar structures to the northward, particularly in Virginia. Now, it is plain to students of Southeastern culture, and is generally conceded, that the use of temples among Virginia Algonquian tribes was derived from peoples farther south. The description preserved to us of this temple of Talomeco suggests that higher development of ceremonial houses from which we naturally imagine those of tidewater Virginia to have been borrowed. Since it combines the characteristic features of this latter area with those of the Mississippi valley it might be claimed that it represents the culture which gave birth to both the others. In one feature, the regard for pearls, it recalls the Hopewell culture of Ohio.

This would presuppose a relatively high civilization of the Indians of Coftachequi and that is in fact indicated by the De Soto chroniclers. True, certain other provinces are said to have been more populous and better supplied with corn. All our authorities agree that a town called Quiguate west of the Mississippi River and probably in southeastern Arkansas was the largest single town²⁵ Coça, Apaiachee, and Anilco or Nilco are praised as the most populous provinces and the ones best provided with corn.²⁶

²⁵ Narr. De Soto, I, 130, II, 31, 146.

²⁶ *Ibid.*, I, 149, II, 34, 112.

But it must be remembered in this connection that two years before the Spaniards visited Cofitachequi (i.e., in 1538) it had been devastated by a plague which of course cut down the population immediately and the crops indirectly. Yet the inhabitants of Cofitachequi province appealed to them as the most civilized. Biedma, it is true, ventures no comment one way or the other, but Garcilaso indicates the impression of superiority which these people made upon his informants in several ways, particularly in his assertion that the temple of Talomeco was "the most wealthy and exalted of all those seen by our Spaniards in Florida."²⁷ Ranjel says that this province, though poor in population and corn, "was the best that they saw and with the land in the best condition,"²⁸ and later on he remarks,

in Aquixo, and Casqui and Pacaha, they saw the best villages seen up to that time, better stockaded and fortified, and the people were of finer quality, *excepting those of Cofitachequi*.²⁹

Finally, Elvas declares, "they are more civilized than any people seen in all the territories of Florida."³⁰ While I think there is reason to believe that the people of Cofitachequi had themselves come to Savannah river from the Mississippi country, their culture and cultural remains deserve careful study by all interested in the solution of the mound-builder problem.

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²⁷ See p. 583 above.

²⁸ Narr. De Soto, II, 101.

²⁹ *Ibid.*, 140. The italics are mine.

³⁰ *Ibid.*, I, 66-67.

PROBOSCIS STATUE FROM THE ISTHMUS OF TEHUANTEPEC

By GLADYS AYER NOMLAND

AN ELEPHANT-LIKE stone statue was discovered in 1930 by Mr. James P. Fox at Arroyo Sonso, 25 km. southeast of Puerto Mexico and about 15 km. from the Tonolá river, which bounds the State of Vera Cruz on the east. When first discovered, the statue was lying in the mud at the bottom of a small arroyo. Later it was extracted and placed on an adjoining alluvial flat or "conuco" between two streams at the head of Arroyo Sonso, which is a short distance northwest of the locality known as Reyes. There are no indications of the original position or purpose of the image. Pottery sherds are frequent in the alluvial deposits along the near-by streams, but there are no other evidences of aboriginal habitation. The generally flat country immediately surrounding the site is bounded by a series of low sandstone hills where no pottery or stone images were encountered.

The statue is made of dark-gray, semi-vesicular basalt. Owing to its texture and mineral constituents, this rock is very hard, so that carving a figure of these proportions from such material would require more effort and skill than in making it from limestone or sandstone, the usual materials of construction in southern Mexico. Deep pitting on the surface of the statue indicates a considerable age. At the time of manufacture it was undoubtedly smooth and clean-cut, but long weathering has pitted the surface and blurred the outlines.

At present it is the only stone image known in the immediate vicinity. Other stone statues of human beings, made of basaltic rock evidently derived from the same source, are known at La Venta, about 9 km. east of the Tonolá river in the northwestern part of Tabasco. The La Venta statues are scattered around the foot of La Venta hill, the steep top portion of which has evidently been constructed by aboriginal inhabitants.

The nearest locality from which basaltic rock could be obtained is probably the vicinity of the volcano San Martín near the seacoast northwest of the city of Puerto Mexico, and about 60 km. from the Reyes locality. Conveying a block of basalt or a finished statue of comparable weight from such a distance would offer very difficult transportation problems even at the present time.

The question of true elephant portrayals in Middle America is of such interest to anthropologists that the writer requested Mr. J. P. Fox, Dr. W. H. Corey, and Dr. J. O. Nomland to revisit the Arroyo Sonso locality and measure and photograph the image. This was effected in April, 1932, with the following results:

The maximum height of the statue is 95 cm. From the base to the top of the shoulder is 60 cm., while the depth from front to back is 60 cm. and the width 72 cm.

The head is 35 cm. from neck to top, with a maximum depth of 53 cm. and a width from tips of ears of 50 cm. The fore part of the top of the head is flat, while the back slopes up and terminates in a long projection bisected by a groove 7.5 cm. wide and 5 cm. deep. There are three irregular U-shaped grooves 3 cm. deep on the top surface of the head. The eye-sockets are large, irregular pits varying from 9 to 10 cm. in diameter and 3 cm. deep. From center to center of eye-pits is 24.5 cm. Between the eyes, from the connection of the proboscis to the head, a vertical U-shaped groove 3.5 cm. wide and 16 cm. long extends two-thirds of the distance to the top of the forehead.

The rounded proboscis from forehead to belly is 38 cm. long, and slightly larger at the top than at the bottom. At the forehead it is 15 cm., at the chest 14 cm., and at the belly 10 cm. in diameter. The maximum depth is 14.5 cm. The belly is round and pendulous with a possible navel pit.

The horizontal ears are bar-shaped, 10 cm. wide, and vary in length, the right being 19 cm. long and the left 18 cm. They are on a level with the eyes and extend 5 cm. from the head.

On the lower part of the left arm there is an irregular U-shaped groove 2.3 cm. deep.

From elbow to elbow across the front is 68 cm., and from middle to middle of the knees is 50 cm., with a depth of 20 cm. from knee to crotch. The bottom is flat. (Plates 21 and 22.)

The possibility of the association of man and elephant in Pleistocene or early Recent times seems to be strengthened by the recent trend of science. In reply to a letter to Professor Chester Stock of the California Institute of Technology regarding such association he wrote under date of June 2, 1932 as follows:

If we can definitely establish that man existed in North America in either late Pleistocene or very early Recent time, and if we can determine likewise that he was associated with mammalian forms characteristic of the Ice Age, it seems to me quite possible that such an association would include also representatives of the elephant tribe. However, I would want first also to accumulate more instances of direct association than are available at the present moment before stating that such was actually the case.

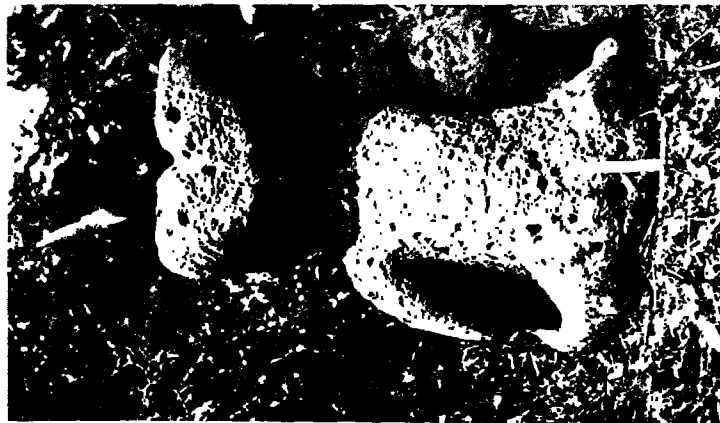
The probability that the proboscideans survived in later times than has generally been supposed is reinforced by the discovery by Dr. J. O. Nomland of a late mastodon in Ecuador.¹ He reports as follows:

In the vicinity of the town of Santa Elena, Province of Guayas, several instances of the discovery of elephant and other mammalian remains have been reported. Usually

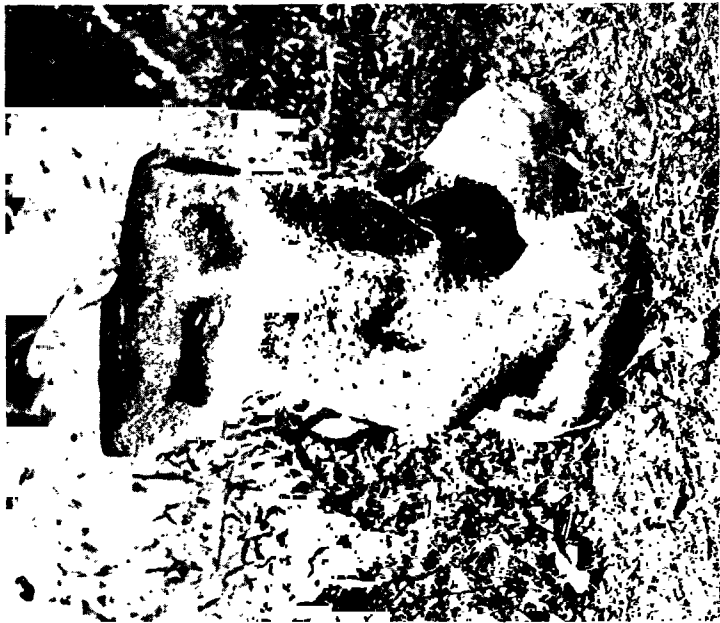
¹ Nomland, J. O. Unpublished notes.



a Front view of statue showing proboscis, eye-pits, and blunt feet.
b Side view of statue showing elongated head and large ears.



a



b

a. Back view showing enlarged occiput, pitted humanlike back, and flat bottom.
b. Three quarters view, chalked to outline the important features.

these were found on the surface and without being referable to any definite geological horizon. However, at a location about 28 km. northeast of the town of Santa Elena fossil bones of a mastodon have been found whose age seems to be more clearly indicated. At that locality there is a spring where even at the present time wild animals come to drink. Evidently the mastodon died after coming to the water hole. The stream bed in which the skeleton occurs has been eroded out of the Pleistocene terraces which are shown very plainly in this part of the country. It is therefore evident that the erosion of the material and deposition of the mastodon bones must have taken place some time after the Pleistocene terrace deposits had been laid down.

A still more convincing discovery was made in 1928 by Fr. Spillmann,² who found a mastodon skeleton at Alangasi, near Quito, Ecuador, which was associated with spear points, fire-places where men evidently cooked the mastodon, and potsherds. Fr. Spillmann states as follows:

Die Untersuchung der Tonscherben hatte nun das ganz überraschende Ergebnis, dass sie einer primitiven Kultur zugezählt werden müssen, jedoch mit stark majoiden Kultureinflüssen. Die Archäologen sind so weit gegangen, dass sie das Alter der Scherben, die mit jenem Mastodonten vergesellschaftet waren, auf 1600 bis 1800 Jahre geschätzt haben. . . . Es waren nicht elementare Ereignisse, die diese fossile Fauna vernichtet haben, sondern der Mensch hat bereits einer Kulturstufe angehört, die ihm die Mittel gab, jene Riesenformen zu überwaltigen. Weiter bedeutet dieser Fund ein wichtiges Element für die archäologische Forschung Amerikas.³

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² Spillmann, Fr. "Das sudamerikanische *Mastodon* als Zeitgenosse des Menschen majoiden Kulturkreises," *Palaeontologische Zeitschrift* 11:172, 177, 1929.

³ *Op. cit.*, 172: "So fand ich z. B. in der Gegend des Beckens, wo das Rektum zu liegen kam, eine grössere Menge von sehr gut erhaltenen Kotballen von ungefähr 18 cm Durchmesser, kugelförmige Ballen von der Konsistenz des Pferdekotes."

SPANIARDS AND THE SWEET POTATO IN HAWAII
AND HAWAIIAN-AMERICAN CONTACTS By JOHN F. G. STOKES

DIXON¹ discusses the theory of the introduction by the Spaniards of the sweet potato into Polynesia. He points out that if we accept the present conclusions of the botanists that the plant is of undoubted Central and South American origin, then its presence in Polynesia reported by the eighteenth century explorers must be due, either to earlier Spanish voyagers, or to still earlier and non-Spanish communication between Polynesia and America.

Analyzing an existing hypothesis that the Spaniards introduced the plant from South America to the Marquesas, whence it spread throughout Polynesia, Dixon disproves it but, in accepting the discarded theory of early Spanish contacts with Hawaii, he fails to use his strongest corroborative argument. He states²:

It is true . . . that the Hawaiian group was probably visited by Saavedra and Gaetano in the early sixteenth century, but no details of their findings were ever made known.

It seems to be now accepted that in 1528 two of Saavedra's ships were wrecked on the [Hawaiian] islands, the few survivors intermarrying with the natives . . . Gaetano seems to have visited the group some twenty-five years later . . . In view, moreover, of the extent of the Manila trade during the sixteenth century, it is not impossible that other Spanish ships may have touched there [Hawaii].

With these ideas, it is not surprising that Dixon left the question open with regard to Hawaii, although inclined to establish an independent antiquity there for the article. He notes on the pages quoted that Cook in 1778 and all following visitors recorded the abundance and excellence of the sweet potato, and adds:

The carefully elaborated methods of cultivation, the part played by the plant in the oldest cosmogonic myths, and the fact that a number of chants and sacred charms used in connection with the sweet potato are in the more archaic form of speech, all speak for the real antiquity of the plant's cultivation by the Hawaiian people.

Dixon's references to the Spanish contacts may be recognized as coming from Fornander³ who, by assuming to supply confirmatory evidence in Hawaiian traditions, has obtained an impressive following. This, despite

¹ R. B. Dixon, *The Problem of the Sweet Potato in Polynesia*, AA 34:40 ff., 1932

² *Ibid.*, 44, 50.

³ A. Fornander, *The Polynesian Race*, Vol. 2, pp. 106, 158, London, 1880.

his statement that⁴ "No traces of [Spanish] influence can now be found in the religion, knowledge, customs or arts of the Hawaiians," an admission made by Alexander⁵ another high authority who favored the idea of early Spanish arrivals in Hawaii. Since Fornander's acquaintance with Hawaii began in 1838 and continued until his death in 1887, and since he married into a high-class Hawaiian family, his statements of fact in Hawaiian matters might be more impressive than his theories. In view of the lasting imprint of Spanish influence on other primitive peoples, its absence from Hawaii should be regarded as a standing denial of early Spanish contacts.

However, for clarification in future studies of racial or cultural influences in Hawaii, it should be pointed out that the theory of early Spanish contacts, as resting on actual or assumed Spanish evidence prior to Cook's discoveries, was completely exploded by the Swedish geographer Dahlgren.⁶ In 1916 he presented to the Royal Swedish Academy of Sciences an illustrated memoir (222 pages) exhausting the subject. His conclusion, based on the study of all available records is printed in heavy type in these plain words:

No historical fact proves, nor is there any sort of probability, that the Hawaiian Islands were ever visited, or even seen, by the Spaniards before their discovery by Captain Cook in 1778.

In 1930, Restarick⁷ summarized Dahlgren's work and added what must be taken as a clear admission by the Spaniards that the Hawaiian islands were unknown to them before Cook's time. Twelve years after their discovery by Cook, the Spaniards sent Lieutenant Quimper to examine them. Restarick⁸ asks:

Can anyone explain why in 1790, a Spanish naval officer was sent to Hawaii to investigate and report as to making a military settlement there, if this group had been known to the Spaniards for over two centuries?

The title of the report was: "Don Manuel Quimper. The Sandwich Islands. A brief description of the Archipelago discovered by Captain Cook." This interesting admission emphasizes the fact that the theory of the discovery of the Hawaiian islands by the Spaniards originated after Cook's time.

⁴ *Ibid.*, 110.

⁵ W. D. Alexander, *The Relations between the Hawaiian Islands and Spanish America in Early Times*, Hawaiian Hist. Soc. Papers 1-3, Honolulu, 1892.

⁶ E. W. Dahlgren, *The Discovery of the Hawaiian Islands*, Kungl. Svenska Vetenskapsakademiens Handlingar 57, no. 4, Uppsala, 1917.

⁷ H. B. Restarick, *The Discovery of Hawaii*, Honolulu, 1930.

⁸ *Ibid.*, 21.

Dahlgren and Restarick have completely covered the matter of the alleged discovery by Gaetano or by the Manila galleons. A little more might be said concerning the Hawaiian-localized myth relating to Saavedra's vessels.

Fornander⁹ estimated that when the two lost vessels parted company with that of Saavedra, they were within 200 miles of Hawaii. Dahlgren¹⁰ points out the error of this calculation and indicates that the vessels "would have had to sail *against wind and current*" about 27° or nearly 2000 miles in order to place themselves in position for the phenomenon Fornander described.

Fornander also used an alleged Hawaiian tradition of castaways on the island of Hawaii, referred for chronology to the reign of a certain king.¹¹ To arrive at the year, Fornander did not use his knowledge of the early maturity of his relatives by marriage, but calculated Hawaiian genealogies on the unduly long basis of a 30-year generation. Then by additional figuring he dated the landing of the castaways as between 1525 and 1528. The disaster of Saavedra's vessels was in 1527! The coincidence, instead of serving as a warning, was taken as absolute confirmation by Fornander and very many others.

Now the tradition used by Fornander rests on very poor authority. It was localized on Hawaii island by Dibble¹² who, elsewhere in what he called "faithful history," grouped the incidents of fourteen years and condensed them as happening within three days.¹³ There are over a dozen traditions or versions of castaways recorded from native sources, some of which are no doubt repetitions and relocalizations.¹⁴ Dibble however gives but one, and in so doing has, I believe, combined the incidents of a Maui tradition of one generation with an island of Hawaii localization many generations later.

The Hawaiian native authority Kamakau,¹⁵ who was Dibble's pupil and also Fornander's principal informant in native traditions, argued against the accuracy of the version used. He placed the landing as on Maui and about four generations earlier than given. Kamakau also quoted chants in

⁹ Fornander, *The Polynesian Race*, 109.

¹⁰ Dahlgren, *op. cit.*, 26.

¹¹ Fornander, *The Polynesian Race*, 108.

¹² S. Dibble, *Mooolelo Hawaii*, p. 4; Lahainaluna, 1838.

¹³ J. F. G. Stokes, *Origin of the Condemnation of Captain Cook in Hawaii*, Hawaiian Hist. Soc. Ann. Rep. 39:86, Honolulu, 1930.

¹⁴ Stokes, MS., *Hawanan Traditions of Castaways*.

¹⁵ S. M. Kamakau, *Ka Nupepa Kuokoa*, Januari 19; Honolulu, 1867.

support of his assertions. I agree with him, having heard part of the account in 1916 on Maui at the site claimed by Kamakau. The versions used by Fornander could be better applied to this site than to that on the island of Hawaii. In addition, when at the latter in 1906, I attempted, without success, to obtain its confirmation. As may be shown,¹⁶ the greatest probability is that these castaways were from Japan, and secondarily, from the northwest coast of America.

The preceding comments cover the main arguments in support of the theories of early Spanish contacts with Hawaii. In collateral support, many other matters have been brought forward at different times, the more important of which may be discussed:

On first landing, Cook's officers found iron implements in Hawaiian hands, one piece of which was thought to be the point of a broadsword. I have indicated that all the iron then observed came as driftage, and that the implements described are identifiable with Japanese knives.¹⁷

Feather cloaks and helmets were said to be traceable to Spanish forms. The helmet form is Grecian and not Spanish, and Fornander¹⁸ states that it predated the alleged Spanish contacts. The forms (not form) of the cloaks are found in New Zealand and elsewhere.

The fairer native types termed 'ehu in Hawaii were said to be descendants of the Spaniards, from whom certain Hawaiian words were alleged to have been received, in particular: pono, "good" from bueno; poko, "short" from poco; pua'a (puaka), "pig" from puerco. Comparisons under urukehu, pono, poto and poaka by Tregear¹⁹ will show a Polynesian-wide distribution indicating great antiquity and precluding argument of origin from Spanish.

None of the particulars so far advanced as substantiating the theory of early Spanish contact with Hawaii have withstood a critical examination as to fact and authenticity. In view of this, and especially of the denial by Fornander and Alexander that any Spanish influence could be traced in native Hawaiian culture, it should be concluded that Hawaii was unknown to any Spaniard prior to its discovery by Cook.

Dixon's extensive studies of the literature concerning the sweet potato in Hawaii, as indicated by his comprehensive summing up quoted above, leave little to add regarding the antiquity of its establishment. It was the Hawaiian's most important vegetable food after the taro; the main dry-land

¹⁶ Stokes, MS., *Japanese Cultural Influences in Hawaii*.

¹⁷ Stokes, *Iron with the Early Hawaiians*, *Hawaiian Hist. Soc. Papers* 18.13; Honolulu, 1931.

¹⁸ Fornander, *The Polynesian Race*, 110.

¹⁹ E. Tregear, *Maori Polynesian Comparative Dictionary*; Wellington, 1891.

crop and the sole dependence of many on land unsuited to irrigation. Probably it was preferred by some to the taro because, as Malo²⁰ notes:

It is excellent when roasted, a food much to be desired. The body of one who makes his food of the sweet potato is plump and his flesh clean and fair, whereas the flesh of him who feeds on taro-poi is not so clear and wholesome

In addition, it matures two or three times as quickly as taro, and the leaves serve as greens.

One legend indicates that sweet potatoes were specially prepared as food for long voyages. Kuapakaa²¹ is mentioned as peeling the small sized sweet potatoes and drying them in the sun for the purpose. A footnote states that the practice was followed in war-time and for long voyages. I have not verified this statement, but as Kuapakaa is designated as the grandson of the mythical wind-god and directed the wind from his gourd, the association would certainly imply antiquity, even though the legend would be dated as about 1600 A.D. If this tale, as is probable,²² has recorded a Polynesian custom or method of preserving sweet potatoes for use on voyages, a further investigation or enquiry along this line may lead to interesting results, either with regard to directions of migrations or to racial elements within the group.

Having eliminated the Spaniards as the hypothetical factor in the introduction of the sweet potato from South America to southern Polynesia, Dixon²³ gives notice of a discussion on other possible human agencies for the same purpose. The subject is a promising one, especially since there is similarity in names of the article in the two regions.

It is to be hoped, however, that attention will not be confined to South America. The speculative features of contacts between Polynesia and America north of the equator might also be considered. My interest is stimulated through Dixon's reference to Central America being the home of the sweet potato, as well as South America. I had previously been content to attribute its presence in Hawaii to a route through southern Polynesia.

²⁰ D. Malo, *Hawaiian Antiquities*, (N. B. Emerson, Translator), p. 67; Honolulu, 1903.

²¹ Fornander Collection, B. P. Bishop Mus. Mem. 2: 116-124.

²² Dr. P. H. Buck (Te Rangi Hiroa of New Zealand) informs me of the Maori "kao"—a reserve and voyaging food made from sweet potatoes. As he witnessed the process, the small tubers were peeled by scraping, baked in the ground oven for twenty-four hours (instead of the usual two or three hours) and exposed to the sun until dry and hard.

The Hawaiian legend quoted does not mention the cooking. Apparently this was an oversight because the dictionary defines "ao" (Maori, "kao") as sweet potato or taro "baked" and dried in provision against scarcity.

The processes in each locality were evidently the same—an indication that the antiquity of the custom extended as far back as 1300 A.D. or earlier.

²³ Dixon, p. 59.

Were there an early contact between Hawaii and Central America, it might not be so surprising that the Mexican poppy (*Argemone Mexicana*) was found in Hawaii by Cook's people. It might have been ship-borne instead of wind-borne as is generally stated.

The Hawaiian term for sweet potato is uala or uwala, regarded as carrying an irregular letter loss (m) or letter change (m to w) from the various southern Polynesian terms²⁴ kumara, kuma'a, kumala, 'umara and 'umala.²⁵ The other changes are regular and follow local rules. Possibly the Hawaiian term had a different derivation.

In a paper²⁶ submitted for publication in 1927, I traced the evolution of a Hawaiian stone implement, known as the stirrup or flat-iron type of poi-pounder, from a semi-natural block. In its final stage it was used to mash wet taro into a heavy paste. However the evolutionary examples seemed to record some experimentation in changing a grinder suited only to dry material, such as grain, to one suited to the later known use. This conclusion was reached after close attention to the attrition surfaces and evolution of the grips.

These implements were formerly used on flat or slightly concave stones—not the wooden platters generally used for poi. In addition, the early transitional forms of the implements referred to blended with another and rare form of grinder of a highly developed type, so far without analogy elsewhere as to shape. The latter was definitely a grinder, and had never been used for pounding—the standard method of making poi.

As is well known, there is a remarkable similarity in form between the Hawaiian flat-iron type and others found in Central America and Mexico and assumed to be corn-grinders. In both regions, the evolution may be followed from a simple type. The explanation then (and possibly the correct one) is parallel evolution. However, the mainland specimens are rare and the standard corn-grinder is cylindrical, although functionally it is comparable to the rare Hawaiian grinder mentioned above. Add to these the factor of the use of stone as the nether working surface, unusual in Hawaii but universal for corn-grinding on the mainland, and it might be questioned whether we are still following parallel evolution, or finding evidence of successive contacts between Hawaii and Central America. With the latter in mind, the myth or legend noted down by Ellis²⁷ might be significant as an almost forgotten record of such contacts. The account is that the land of Haupokane was revealed in a vision to a priest, Kamapiikai, who made

²⁴ Tregear, p. 182.

²⁵ Dr. Buck adds the term kuara in Mangaia to this list of Tregear's.

²⁶ Stokes, *The Food Rubbing Stones of Kauai*.

²⁷ W. Ellis, *Tour through Hawaii*, p. 400, London, 1828.

several voyages, not returning after the fourth. Descriptions of the country mentioned

the *one rauena*, a peculiar kind of sandy beach well stocked with shell-fish, &c . . . inhabited by handsome people, whose property was abundant, and the fruits of the earth delicious and plentiful. There was also a stream or fountain, which was called the *wai ora roa*, (water of enduring life.)

The subject must necessarily be speculative, especially since the mysterious land is the Hawaiian Paradise (or one of them) and home of the god Kane. However Polynesian stories seem to combine with ease both myth and tradition. Kuapakaa, mentioned above, although designated as the grandson of the wind-god, seems to have been a real person resident in the Hawaiian islands.

We may then, for the purpose of the present enquiry, regard Kamapiikai's voyages as real and the account as subsequently merged with myth. Compared with the better known story²⁸ of the search for the "water of life," from which magic and flight are inseparable, Kamapiikai's account is so matter-of-fact that it suggests probability. He travels with a certain number of canoes and companions and the years of his first absence are mentioned. He meets ordinary people, not gods nor ancestors in non-human forms, and the new country described, except for the water of life theme, lacks the elements of unreality present in the other account.

The Hawaiian dictionary (1922 edition) incorrectly records *onelaueua* as a place name, instead of a descriptive term, but adds "one laula" [broad sands or wide beaches] as a synonym. This is fortunate because *lauena* (Ellis' *rauena*) is without dictionary definition. The definition of "one" is "(1) Sand. (2) Mud or fine earth carried by water; silt."

The Kamapiikai legend, to me, implies contacts by Hawaiians with a new people enjoying a wealth of unfamiliar objects and material, living in a productive land of previously unknown fruits and having an unfamiliar type of and term for beaches or mud flats well stocked with shell-fish and, in addition, wide sand beaches. The last two are un-Polynesian, except for New Zealand, and the locality for such, nearest to Hawaii, is the American coast.

As represented above, from the material presented a good case could be made for early Hawaiian-American contacts, and Polynesian theories have been based on less. Equally so, such theories, through weak premises, have handicapped later studies. It will be sufficient therefore to submit the above presentation for examination in subsequent studies or theories of early contacts between Polynesia and America.

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²⁸ Fornander Collection, I:86 ff.

THE short vocabularies III to VIII were collected by me for a specific purpose which should first be explained. They are so short as to have little linguistic value, but there was no time to do more in the course of a rapid tour of the peoples concerned. This accounts for the words selected. They were chosen as the easiest to comprehend through an unfamiliar medium. That is why, for example, "today" was omitted though both "yesterday" and "tomorrow" were included, as experience has shown that "today" may often be mistaken for "now" or "immediately" and vice versa in the first attempts at securing a new vocabulary.

For vocabularies III, IV, V, and VI, Lotuko was used as the medium of interpretation and a Lotuko-speaking interpreter was employed, whom I was able to check by a slight knowledge of Lotuko and particularly of the Lango¹ dialect of Lotuko. Vocabularies VII and VIII were obtained directly through the medium of Didinga, which is understood by a large number of the members of these two tribes. Vocabularies I and II have been included for the purpose of comparison, the former being extracted from Lord Raglan's paper "The Lotuko Language."²

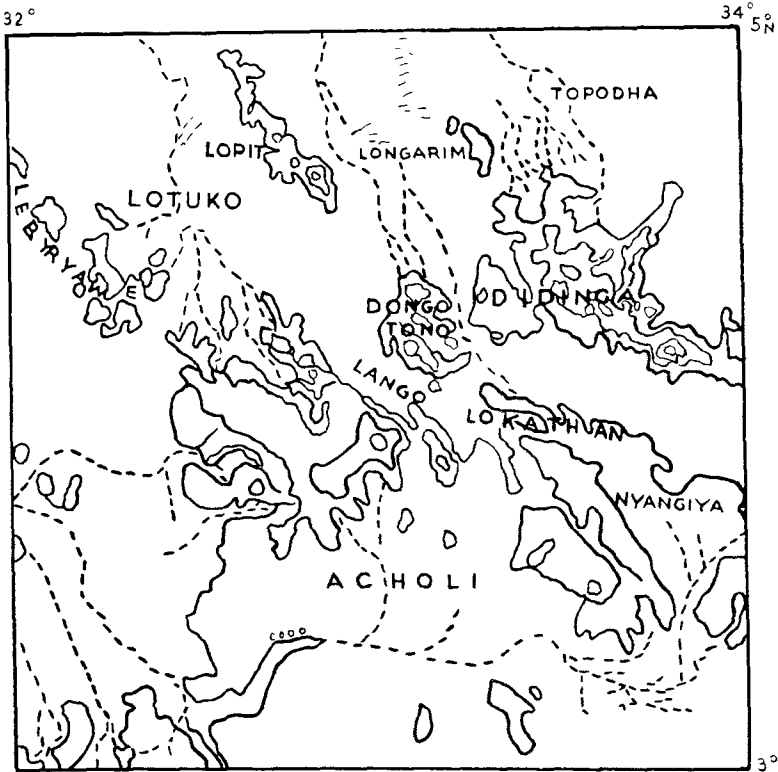
My purpose in collecting these vocabularies was to find some linguistic clue to the relationships of the various tribes, which would support or disprove certain theories I had formed on cultural grounds. This area was formerly the homeland of the Shilluk-speaking peoples, and from it the different tribes of the Nilotic family moved north and south after the dispersal in the fifteenth century. Ever since then different cultures have been in conflict here, and the mountains have preserved broken remnants of tribes isolated by the inundation of alien peoples into the more accessible plains.

I do not here wish to enter into the larger question of the relation be-

¹ Lango (sing. Lalangoni)—a Nilo-Hamitic tribe living round Ikoto, one of whose branches, the Lorwama, extends to Madial and Madi Opei and has to some extent intermarried with the Acholi. Their culture shows considerable differences from Lotuko, but their language (if ever very different from Lotuko) has now been largely assimilated to that of the larger tribe. They claim that Lango is their tribal name, but they have no connection whatever with the Lango of the Uganda Protectorate, who are a Nilotic tribe. This term "Lango" is difficult to explain. It is claimed also by the Nilotic Lango and (possibly with more justice) by their Nilo-Hamitic neighbors, the Akum. It is also applied, however, as a nickname to various other tribes, but always in an eastward direction. Thus the Alur on the west of the Nile speak of the Acholi as Lango; the Acholi (who speak of the Nilotic Lango by the name Miro) apply the term Lango to the tribes living to their east: viz. the Ajie, Karamojong, Dodoth, and Didinga.

² Bul. School of Oriental Studies, Vol. II, pt. II: 267.

tween the Lotuko and the Nilo-Hamitic group, which includes elements so diverse as the Masai, Nandi, Turkana, Karamojong, and Topodha, not to mention many other tribes. There is as yet insufficient evidence to assert definitely that Lotuko does or does not belong to the Nilo-Hamitic group, and if anything the balance of cultural evidence is against any such al-



Map 1 Lotuko speaking tribes

NOTE.—In northeast section of map, read *Lerya* and *Oce*.

location. Linguistically of course the allocation is attractive despite serious discrepancies; but here we should take warning from the Bari: from the linguistic point of view Bari might be classified with the Nilo-Hamites, but culturally they are clearly incomers from the west, who by conquest or contact have assimilated certain Eastern characteristics. It is not inconceivable therefore that the Lotuko are also alien from the Nilo-Hamitic group.

That, however, is not the point at issue here. What I wished to deter-

mine was the local relationship between tribes conquered by the Lotuko and generally accepted as Lotuko, because they can speak and understand that language: and though the vocabularies give somewhat negative results—possibly because too limited or possibly because it is too late to discover more than traces of the original dialects—they nevertheless contain some unsuspected features of interest.

Before starting this inquiry I knew from cultural evidence that the Dongotono and the Lokadhan were the same people and expected to find a linguistic affinity: I surmised that the Lopit were also non-Lotuko and possibly came of the same stock as the Dongotono. The 'Lokoya,' shown here as Lërya and Owé, are generally accepted as different from the Lotuko: I knew nothing about them but wished, if possible, to find some clue to their identity. I had no views concerning the Nyangiya.

The vocabularies suggest the faint possibility that in the distant past all these mountain tribes were related and spoke a common language, but that they have been isolated from each other by later Lotuko-speaking immigrants, and as a result of this isolation have largely fallen under the linguistic influence of their neighbors. There is not sufficient evidence to say whether their original language (if one may be predicated) was Hamitic or not, but in view of the absence of grammatical gender in Nyangiya (apparently the most primitive) the presumption is that it was not.

OBSERVATIONS

I. The Lotuko vocabulary calls for only two remarks. Comparison with Turkana will show not only the resemblances, but also the wide dissimilarities between the two languages.

The word given by Lord Raglan for clan is Kang or Nalaghang. I was unable to confirm this, but found nekhang used for the family enclosure in a village (*cf.*: Acholi. gang), and nakhang for the family. Both nemanit and nawoyo appear to be used for clan, but the latter has a more intimate connotation and appears generally to be restricted to a group of relatives extending back for not more than three generations. Nemanit is the general word and is also used for clan in the Lango dialect of Lotuko.

Lord Raglan writes (*op. cit.* p. 270):

It seems probable that all nouns were originally divided into three genders, and that the neuter gradually absorbed the feminine and most of the masculine.

On an earlier page na- is given as the neuter prefix, which combines with i-, the almost obsolete feminine prefix, to become naki- and then ne-, and with the masculine prefix lo- to become nalo- and then no-. We are told that k- or gh- as an initial vowel indicates a case distinction. It would appear, however, that k- has not always this significance, but that an initial k- or kh- often indicates a common (not a neuter)

TABLE 2. LOTUKO VOCABULARIES (Continued)

ENGLISH	I LOTUKO	II TURKANA	III LOIT	IV LERYA	V OWE	VI DONGOTONO	VII NYANDITA	VIII LOKADHAN
house	nāji (nasir)	aknaji	kaji	atun	adun	kaji	ir	naki
water	naji	akin	kifony	abari	adun	kaji	lek	naki
foal	nagho (nagho)	ekkorait	kochoro (kokhoron)	akhorong	akhorong	kaji	gek	naki
sheep bed	naki (naki)	emethak	war	akhor	akhor	kaji	dodo	naki
river	lode	angolol	war	akhor (water)	akhor	kaji	akhor	naki
rain	naki, naki	emot	momo	akhor	akhor	kaji	leik	naki
calabash bowl	naki (naki)	akhor	kaki	akhor	akhor	kaji	war	naki
alillet	naki (naki)	akhor	naki	akhor	akhor	kaji	war	naki
bullrush millet	naki	akhor	akhor	akhor	akhor	kaji	war	naki
beer	naki	akhor	akhor	akhor	akhor	kaji	war	naki
porridge	naki	akhor	akhor	akhor	akhor	kaji	war	naki
gruel	naki	akhor	akhor	akhor	akhor	kaji	war	naki
blood	naki	akhor	akhor	akhor	akhor	kaji	war	naki
sun	naki	akhor	akhor	akhor	akhor	kaji	war	naki
moon	naki	akhor	akhor	akhor	akhor	kaji	war	naki
smoke	naki	akhor	akhor	akhor	akhor	kaji	war	naki
tobacco	naki	akhor	akhor	akhor	akhor	kaji	war	naki
snake	naki	akhor	akhor	akhor	akhor	kaji	war	naki
forest	naki	akhor	akhor	akhor	akhor	kaji	war	naki
god	naki	akhor	akhor	akhor	akhor	kaji	war	naki
chief	naki	akhor	akhor	akhor	akhor	kaji	war	naki
head	naki	akhor	akhor	akhor	akhor	kaji	war	naki
eye	naki	akhor	akhor	akhor	akhor	kaji	war	naki
ear	naki	akhor	akhor	akhor	akhor	kaji	war	naki
nose	naki	akhor	akhor	akhor	akhor	kaji	war	naki
tooth	naki	akhor	akhor	akhor	akhor	kaji	war	naki
foot	naki	akhor	akhor	akhor	akhor	kaji	war	naki
stomach	naki	akhor	akhor	akhor	akhor	kaji	war	naki
breasts	naki	akhor	akhor	akhor	akhor	kaji	war	naki
bone	naki	akhor	akhor	akhor	akhor	kaji	war	naki
urinal	naki	akhor	akhor	akhor	akhor	kaji	war	naki
shrine over grave	naki	akhor	akhor	akhor	akhor	kaji	war	naki
waterjar	naki	akhor	akhor	akhor	akhor	kaji	war	naki
shrine for first fruits or sickness	naki	akhor	akhor	akhor	akhor	kaji	war	naki
stud goat	naki	akhor	akhor	akhor	akhor	kaji	war	naki
elk	naki	akhor	akhor	akhor	akhor	kaji	war	naki
elk	naki	akhor	akhor	akhor	akhor	kaji	war	naki
stone shrine	naki	akhor	akhor	akhor	akhor	kaji	war	naki
drum poles	naki	akhor	akhor	akhor	akhor	kaji	war	naki
child	naki	akhor	akhor	akhor	akhor	kaji	war	naki
doorway	naki	akhor	akhor	akhor	akhor	kaji	war	naki

gender, while l- indicates the masculine and n- the feminine. One example will suffice. Khobu (pl. khobwok) means chief or rainmaker of either sex (an office invariably combined); Lobu (lobwok) is a male chief or rainmaker, and nobu (nobwok) a female chief or rainmaker. This word khobu, by the way, which appears as kabu in Lopit and Dongotono seems to be identical with the Didinga kabu, which means the leader of the kabuchet or clan and has no rainmaking significance. The phrase abusak kiteng for a bull shows, however, that the tendency is for grammatical distinctions of gender to disappear, whereas Lerya preserves these grammatical distinctions more completely, e.g. akhiteng, okhiteng, cow and bull: oumi, aumi, lion and lioness.

III. Lopit. The range of hills is officially misnamed Lafit, and the people are known to the Lotuko as Lomya, but they appear to call themselves Lopit (sing. Lopitit). According to Lord Raglan, northern Lopit is one of the principal dialects of Lotuko, and he adds that except for casual conversation interpretation is needed from Lopit to Lotuko. The vocabulary given above was collected at Idali, and possibly further north on the Lopit range the dialectal differences would have been even stronger. Even as it stands, however, the vocabulary shows remarkable resemblances to Dongotono, especially in the simplification it has undergone by the omission of prefixes of gender. It would appear, however, to be more assimilated to Lotuko and, if it ever had them, to have preserved fewer of the indigenous words than Dongotono. The Lopit hills lie on the trade route between the Longarim on their east and the Beir or Ajiba some three days' journey to the north, and there is a Longarim village at the north end of the range which serves as a half-way house for travellers. (The Longarim and Ajiba both speak dialects of Didinga.) This contact is reflected in the word ôli, which the Lopit use for a bull (Longarim, ôli), but there is no cultural or linguistic evidence that the Lopit were at any time Didinga-speaking.

During the dry season many Topodha³ encampments are to be found on the river Kidepo adjacent to the Lopit, and the latter frequently visit the Topodha to barter hoes and spears for sheep and ostrich feathers. This intimacy accounts for such loan words as môrwo and kifiyong (the latter of which the Dongotono share for the same reason). The aberrant kuro, kid, is possibly also to be traced to the Topodha eghoroi, he-goat.

IV and V. The hills inhabited by the Lerya and Owé are known officially as Lirya and Lueh, and the people are called Lokoya. The name Lokoya was originally given to them by the Bari and is also used by the inhabitants of Lepul Hill (north of Lopit), who are an offshoot of the Nilotic Añwa tribe. By the Lotuko they are called Koryok, "the black people," because they are bowmen and, as they carry no shield, there is nothing to break up their blackness when they are massed in a body. The two groups were formerly one and they called their common country Opôni, but it appears that the tribe is now divided into two sections, the Lerya and the Owé.

³ The Topodha speak a language almost identical with Turkana, and list II suffices for purposes of comparison.

It is significant that some Didinga who accompanied me when I visited them at once noticed their exceptional blackness and compared them with the Dongotono and Lokadhan, whom they strongly resemble. They have several cultural traits which indicate a former connection, but during the short visit I was able to pay them I failed to elicit any tradition of a migration, and none of the old men appeared even to have heard of the Dongotono, the Lopit, or the Lokadhan. It is conceivable, however, that they know them by different names. I could find nothing to confirm Lord Raglan's suggestion that their dialect is intermediate between Lotuko and Bari.

Though their language has been much influenced by the Lotuko, even the Lotuko find it difficult to converse with them, largely (I think) because of an entirely different tonality, and an interpreter is much more needed here than among the Lopit. A comparison of vocabularies IV and V shows that they are obviously one dialect. Gender is grammatically indicated by the prefixes *o-* (masculine) and *a-* (feminine), which are probably the same as the *lo-* and *na-* prefixes we find in Lokadhan and in the Lango dialect of Lotuko, from which Lokadhan appears to have borrowed them. These *o-* and *a-* prefixes are occasionally used in Acholi and Lango (Nilotic languages) to differentiate between the personal names of men and women: e.g. masc. Otim, fem. Atim.

An examination of the vocabularies confirms the inference from cultural similarities. In Lērya and Owé, no less than in Lokadhan, the prefixes of gender may be due to foreign influences, or alternatively Dongotono and Lopit may have lost the sex distinctions which they at one time had. The former hypothesis is more probable, as Lokadhan has certainly acquired its sex prefixes from the Lorwama, a branch of the Lotuko-speaking Lango. Taking vocabularies III, IV, V, VI, and VIII together, we can see a strong tendency for the different dialects to come together whenever they depart from the Lotuko, to which they have all succumbed in different degrees of assimilation.

But the most significant feature of Lērya and Owé is their set of numerals. Lotuko, like all the other vocabularies which we are here considering, has the Nilo-Hamitic numerals, consisting of a mixture of two sub-groups, the Nandi and the Topodha-Turkana. Miyat and ille represent *mut* and *illo* of Nandi, but with the exception of the numeral for one the other numerals are basically the same as we find in the Topodha-Turkana sub-group. In this respect Lokadhan must be omitted from consideration, which will be deferred till later.

When we come to Lērya and Owé, however, we find not only *miyet* and *inde* (*ille* of Lotuko), but also 7 *chova* (*chyova*), 8 *tidhidh* (*tisit*), and 9 *sakhal*, numerals entirely new to this region. *Tidhidh* (or *tisit*) and *sakhal* may certainly be referred to the Nandi 8 *sisiit* (Masai, *isyet*) and 9 *sokol*. These again are due to Galla or Somali influence (*cf.* Somali 8 *sided*, 9 *sagal*), and it seems more than probable that 7 *chova* (*chyova*) is reminiscent of the Galla numeral *torba* (Somali, *tadoba*). These numerals open up a large problem. Nandi and our languages have certain elements of their vocabularies in common, because these elements are part of the general

Nilo-Hamitic culture and are shared both by members of the group and by others who may have come under the influence of the group. These common elements do not necessarily imply that there is anything else in common between, for example Nandi and Lotuko, or that they were at any time in contact with each other. But it is more remarkable to find two numerals such as those used for 8 and 9 by Lērya and Owé reappearing in Nandi, though in the intervening area, which is entirely Nilo-Hamitic, there is nothing whatever like them. This might imply a common origin for Nandi and Lērya, or at least that at some period in their history, when the Nandi were living further north and the Lērya further east, they were in intimate contact. There are however cultural (and possibly physical) difficulties which make this unlikely, and the alternative explanation is more probable. This is that both the Nandi and the Lērya independently came under the same influence, and this view is made more probable by the persistence of the numeral *chova* in Lērya, whereas no trace of the Galla *torba* can be found in Nandi. The presumption is therefore that the Lērya acquired these Galla words, either at some date when they were living in contact with the Galla, or during the period of Galla expansion in the early sixteenth century, when the westward march of the migrating Hamites led them by way of Mongalla to the Great Lakes. A detailed study, however, of the Lotuko dialects is required and also an investigation into the cultural antecedents of the numerous small tribes in this area before such questions can be determined with any degree of confidence.

VI. Dongotono (sing. Dongotononi) and Lokadhan traditions agree that the two peoples are a part of one and the same tribe. Formerly the Lokadhan lived together with their kinsmen on the Okiki hills, where the Dongotono still are, but owing to the continuous raids of the Kokir section of the Lango the Lokadhan migrated first to Teretenya hill and then to an upland valley on the hills behind Madial, called Nakoringoli from the kaolin of which there is a large deposit there. During this period they were on friendly terms with the Didinga, and after reaching Nakoringoli a number of families went further east again and settled on the southern foothills of the Didinga mountains. According to Dongotono tradition, which corresponds with that of the Nyangiya, their ancestors came from Morungoli by way of Nakoringoli, and so the Lokadhan section was really only returning to their former homes. The vocabulary calls for no further comment: its close similarity to Lokadhan is immediately obvious.

VII. There is no means of estimating the former size of the Nyangiya tribe, but it has dwindled now to a few hundred members only, who are rapidly forgetting their own language and prefer now to speak Dododh, a Nilo-Hamitic tongue akin to Karamojong. They claim relationship with the Dongotono, which is not inconsistent with the latter tribe's past history, and not entirely inconsistent with their respective vocabularies. While the Dongotono language has been influenced by Lotuko and especially by the Lango dialect of Lotuko, Nyangiya has been largely influenced by Dododh, and a few words like *pira*, *bidh* and *nyirwodhit* indicate contact with their

western neighbors, the Acholi. Its vocabulary possibly exhibits a much purer form of an original Nyangiya-Dongotono language, and such similarities as *tapat* with Dongotono *tafa*, *ma* with Dongotono *mayu* and Lokadhan *lomadhyu*, *edhike* with Dongotono *ozike* and Lokadhan *lidhike*, suggest that their claim is not so improbable as cultural differences today would appear to indicate.

The numerals *iyon*, *nówé* and *tut* probably originate in Didinga *īy'ō*, *wēch* and *tūr*: while a few words like *kiru*, *dhio*, *unget* and *uket* may be derived from the same source as the Nandi *kiruk*, *iyuog*, *ngeta* and *ujet*. It should be noted that there is no grammatical distinction of sex and that the plural is invariably formed by prefixing *napat-* (? = many).

VIII. The Lokadhan (sing. Lokadhata) are known as Bira to Europeans, who have adopted the Acholi nickname. Though they are without doubt the same tribe as the Dongotono, the latter do not call them Lokadhan, but Lokote after Logotoi, the name by which the Lotuko-speaking Lango know them. By the Didinga they are spoken of as Locheka. Their language has been largely influenced by the Lorwama section of the Lotuko-speaking Lango, from whom they appear to have borrowed the sex-determining prefixes *lo-* and *na-*, but also by the Topodha, to whom such words as *naikwang* are due. Their numerals are aberrant. The word for 5 appears to mean "clenching the hand," but for the numerals 6-9 another word, *ngodé*, has crept in. This appears to be the Didinga numeral *khodé* (= 1) and means "one hand": hence "1 hand and 1" = 6, and so on. *Ososokinekan* means "both hands clenched," and the phrase for 20 means "both hands clenched and feet." For 30 this phrase is repeated with the addition of "and another man," from which one assumes that a whole man originally represented 10 and not 20. I think however that beyond 20 all calculations are normally made, as in Dongotono, by sticks reckoned in units of 10.

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THE ARCHAEOLOGY OF ENVIRONMENT IN EASTERN NORTH AMERICA¹

By PAUL BIGELOW SEARS

IN a recent note in *Science*² the writer has invited attention to the prehistoric shifting of those conditions which characterize the present maize belt. These conditions are known to have extended at one time considerably east of their present position, a fact which may prove to have had interesting consequences in relation to early human culture patterns. The present paper discusses the general problem of climatic changes in eastern North America as a possible background to prehistoric human activity.

The fundamental contrast between culture remains west of the Pacific Coast Range and those east of the Rockies is clearly stated by Dixon.³ On the western coast there is every sign of continuous culture, developing independently and without serious interruption until the coming of the whites. Here arose a multiplicity of language stocks, contrasting with the relatively few found eastward. It is of interest to note that this region is characterized by a good deal of endemic plant and animal life, suggesting that other organisms than man found congenial, insulated abodes permitting a long development behind barriers which protected as well as restrained. The fairly uniform development of certain long-lived coastal trees indicates that this region of North America has not been visited by any very violent climatic shifts for at least 3000 years.

In eastern North America, on the other hand, the student of archaeology encounters cultures which are stratified and seemingly without relation to each other. It is true that the critical methods of the past twenty-five years have done much to dispel the sense of mystery about many of these remains. A considerable number of the upper cultural remains have been integrated with the work of historical tribes. Progress has been made in the correlation of remains that are older, and in the discrimination of those which cannot yet be correlated. Much is yet to be done, notably in the lower Mississippi region and thence westward. While the ethnology of the more important older cultures is not solved, there remains no doubt of the capacity of the American Indians to exhibit such achievements. We no longer are minded to say, "Are these things possible?" Rather we hope to know what made them possible, and when.

In northern New England and southeastern Canada are two culture

¹ Contribution from the Botanical Laboratory of the University of Oklahoma, n. s. 13.

² Recent Climate and Vegetation a Factor in Mound Building Cultures? *Science* 73:640-641, 1931.

³ R. B. Dixon, Some Aspects of North American Archaeology, *AA* 15:549-577, 1913.

strata, the one attributable to historic Algonkians, the other "Red-paint" presumably to an unidentified group, clever in working slate.

The Iroquois region exhibits two phases preceding that which is clearly Iroquois: one with artifacts not unlike those of the Red-paint people, and another higher type with gorgets and bannerstones suggestive of what Shetrone⁴ considers prehistoric Algonkian in Ohio. The relative ages of these two cultures does not appear to be established.

Coming farther south and west into the Ohio valley the situation increases in complexity. At least four types of burials appear—gravel with chipped flints, box-graves with straight and flexed remains, and cremations. In addition there are village sites, and mounds of effigy, ceremonial, and defensive type. Pottery is generally rather rude. The situation is not simple. It is noteworthy, however, that cremation and skill in metals, stone, and bone are associated with the highly developed mound cultures; that box graves persisted into the period of European contact; and that the village sites display no skill with metal, and *no use of the buffalo*. Christopher Gist in 1751⁵ observed buffalo in southern Ohio, and their presence there seems reasonable in view of the numerous relict prairies.⁶

Shetrone⁷ construes the highest mound cultures, Hopewell and Fort Ancient, as intrusions into a region essentially Algonkian. The Hopewell, centering in Ohio, is known to have extended across into Iowa. In Ohio at least it appears to have been preceded and followed by a culture of Algonkian type, and presumably flanked by it toward the northeast. The time relation of the various Hopewell sites throughout their range is an important problem and perhaps can be solved.

In the Southern states, likewise, we are confronted with evidence of an elaborate stratification of cultures, in which not less than three tendencies appear: (1) relation to historic Southern tribes, (2) relation to Ohio mound cultures, (3) suggestions of Mexican, Central American and Antillean influence.

A complexity similar to that of the Ohio valley and Southern states extends northward along the Mississippi valley into Wisconsin. Westward the situation simplifies again, with remains of earthen lodges tapering off into the grasslands area. A wide belt of prairie and shortgrass—typical buffalo-land—separates the westernmost Caddoan remains from the easternmost

⁴ H. C. Shetrone, *The Culture Problem in Ohio Archaeology*, AA 22: 144-172, 1920.

⁵ Quoted in B. Williams, *History of Clermont and Brown Counties*, Milford, Ohio, 1913.

⁶ P. B. Sears, *The Natural Vegetation of Ohio*, Ohio Jour. Sci. 25:139-149, 26:128-146 and 213-231, 1926.

⁷ *Op. cit.*

caves of the Rocky mountain plateau in Oklahoma with their suggestions of cliff-dweller influence.

The most striking feature of this complex is its centering in the Ohio valley and southward. The analogy to a floristic or faunistic center is interesting and doubtless significant. We have here the overlapping of many ranges. There is this important difference however. The overlapping ranges in a floristic map are simultaneous. The overlapping cultures in the Ohio region are successive. Does this imply a long struggle for the most favorable location, with one culture successful for a time, then another, all under fairly uniform environmental conditions? Or does it suggest shifting conditions, now favoring one type of culture, now another?

We are able to state at once that environmental conditions have not been uniform in this region throughout post-glacial time—have not even shown the uniformity of a gradual amelioration of climate.⁸ We are further certain that the Ohio valley, situated along the moraine front, lying intermediate between continental and oceanic extremes, is less buffered against the effects of moisture fluctuations than the east and west extremes of the glacial front. Furthermore, it occupies such a central position between the northern coniferous forests and the rich mixed forests of the Southern states that slight fluctuations in temperature might be expected to produce significant changes in vegetation.

We may also postulate that the cultures of primitive man are less independent of his immediate environment than those of more civilized people. This being the case, cultures will follow, with reasonable prospects of success, the advance of those conditions which most strongly favor them. While it is not necessarily true that they will retreat with the recession of such favoring conditions (witness the persistence and adjustment of the Neanderthal Mousterian with the oncoming of glaciation),⁹ the probability of such retreat is greatly increased by the existence of competing cultures, more favored by the incoming environment.

It seems to be true that eastern North America has long had a congeries of cultures, each rather sensitively adjusted to some one of a variety of environments. The strategic position of the Ohio valley as a tension zone in the midst of these cultures is evident even within historic time. First Ohio, then Kentucky, is known to have served as no-man's-land. Such well-known phenomena as the splitting of the Siouan peoples, and the tradition of

⁸ P. B. Sears, Post Glacial Climate in Eastern North America. *Ecology* 13:1-6, 1932. (Consult for additional references.)

⁹ A. Hrdlicka, The Neanderthal Phase of Man, *SI-AR* 1928:593-621.

ancestral residence in the Ohio valley found among other tribes all serve to emphasize this point of view.

What actual evidence have we regarding the character of prehistoric environment in the eastern United States? Recent application of the Swedish method of pollen analysis (the determination quantitatively of fossil pollen in peat deposits and the reconstruction therefrom of adjacent vegetation)¹⁰ has shown clearly that the course of post-glacial climate has been similar to that in northern Europe. Cold humid conditions modulated into a long period of cool, distinctly continental conditions which warmed and gave way to a more humid climate. This in turn has been succeeded by a prolonged warmer continental climate, with the trend of late centuries toward more humid conditions again. The whole of this sequence has been demonstrated for southeastern Canada, Ohio, Iowa and recently Indiana,¹¹ while a clear confirmation of the recent changes has lately been secured in Arkansas¹² and is doubtless to be inferred in Virginia.¹³

For detailed information as to the methods of pollen analysis and its results in Europe the excellent bibliographies of Erdtman¹⁴ should be consulted. The work thus far done in North America is discussed and correlated by the writer,¹⁵ whose various papers cited below may be consulted, along with those of Lewis and Cocke¹⁶ and Auer¹⁷ for additional information.

To make quite clear the basis of our inferences as to post-glacial climate, data from six different localities are tabulated below. Corresponding strata are taken in each case, representing the various climatic maxima encountered, and the percentages of different kinds of fossil pollen are recorded. Excepting the records from Canada and Virginia, the data were all secured in the writer's laboratory. It must be borne in mind that any interpretation of climatic significance is strictly relative to the present vegetation characteristic of each region. For example, an increase in oak

¹⁰ Sears, Post Glacial Climate, *loc. cit.*

¹¹ P. B. Sears and A. E. Waller, Pollen Analysis of Bacon's Swamp at Indianapolis. (In preparation.)

¹² P. B. Sears and G. C. Couch, Microfossils in an Arkansas Peat and their Significance. Ohio Jour. Sci. 32: 63-68, 1932.

¹³ I. F. Lewis and E. C. Cocke. Pollen Analysis of Dismal Swamp Peat, Jour. Elisha Mitchell Soc. 45, 1:37-58, 1929.

¹⁴ C. Erdtman, Literature on Pollen Statistics published before 1927, Geol. Fören. Stockh. Förh. 49, 2:196-211, 1927; Literature on Pollen Statistics published during the years 1927-1929, *Ibid.* 52, 2:191-213, 1930.

¹⁵ Sears, Post Glacial Climate, *loc. cit.*

¹⁶ Pollen Analysis of Dismal Swamp Peat, *loc. cit.*

¹⁷ V. Auer, Peat Bogs in Southeastern Canada, Geol. Surv. Can. Mem. 162.1-32, 1930.

and hickory for Ohio would suggest drying, while in the prairie states it would indicate the reverse. In Ohio an increase of pine, either northern or southern, would imply a decreasing humidity, while in Arkansas the recent spread of southern yellow pine (with gum) into a region occupied largely by oak and hickory can only be interpreted by supposing an increased humidity.

In each table the levels designated as II and IV are marked by fossils indicating drier conditions than those shown in levels I and III. The last-named is notably humid—even more so than the present, level I. In Ohio, Indiana, and Iowa the virtual disappearance of northern conifers above level IV is clearly a suggestion of warmer conditions subsequent to the formation of that stratum.

The question of chronology is extremely important, particularly for our present discussion. Since our climatic changes just illustrated are similar in character and sequence to those of northern Europe whose chronology

TABLE 1. *Percentages of fossil pollen in corresponding levels of various post-glacial peats in eastern North America*

<i>Quebec—Riviere Ouelle Bog—after Auer</i>							
<i>Level</i>	<i>Depth in ft.</i>	<i>Hemlock</i>	<i>Fir</i>	<i>Spruce</i>	<i>Pine</i>	<i>Birch</i>	<i>Others</i>
I	0	.05	.06	.45	.13	.30	.01
II	13	.01	.02	.06	.40	.50	.01
III	17	.14	.02	.09	.42	.29	.04
IV	21	.01	.03	.06	.75	.11	.04
V	27		.13	.40	.40	.07	

<i>Ohio—Mud Lake and Bucyrus Bogs—combined section</i>										
<i>Level</i>	<i>Depth in ft.</i>	<i>Pine</i>	<i>Fir</i>	<i>Other Conifers</i>	<i>Grass and Herbs</i>	<i>Birches</i>	<i>Hickory</i>	<i>Oak</i>	<i>Beech</i>	<i>Others</i>
I	0	.04	.00	.00	.06	.08	.09	.52	.06	.15
II	11	.03	.00	.05	.01	.00	.31	.46	.02	.12
III	20	.02	.00	.01	.06	.02	.09	.39	.22	.19
IV	24	.14	.04	.14	.00	.02	.26	.27	.07	.06
	25?	.41	.04	.17				.09		.29
V	35?	.03	.50	.45						.02

Indiana—Bacon's Swamp

<i>Level</i>	<i>Depth in ft.</i>	<i>Pine</i>	<i>Other Conifers</i>	<i>Grass and Herbs</i>	<i>Birches</i>	<i>Hickory</i>	<i>Oak</i>	<i>Elm</i>	<i>Beech</i>	<i>Others</i>
I	1	.02	.02	.06	.03	.20	.42	.02	.09	.14
II	5	.06	.02	.29	.00	.11	.26	.06	.00	.20
III	11	.03	.01	.09	.07	.14	.40	.17	.03	.06
IV	17	.02	.15	.58	.08	.01	.09	.01	.00	.06

Iowa—McCulloch Bog (After Lane)

<i>Level</i>	<i>Depth in ft.</i>	<i>Conifers</i>	<i>Deciduous and Swamp Plants</i>	<i>Prairie Plants</i>	<i>Amaranth</i>	<i>Others</i>
I	1	.01	.31	.47	.04	.17
II	4	.04	.30	.27	.33	.06
III	6	.01	.14	.73	.06	.06
IV	9	.09	.32	.21	.26	.12
V	15	.92	.02	.04	.00	.02

**Virginia—Dismal Swamp (After Lewis and Cocke)*

<i>Level</i>	<i>Depth in ft.</i>	<i>Pine</i>	<i>Oak-Hickory</i>	<i>Grasses and Herbs</i>	<i>Swamp Forest and Miscellaneous</i>
I	0	.13	.03	.12	.71
II	4	.16	.05	.36	.43
?	6	.08	.01	.43	.48
?	9	.21	.01	.38	.39

* Significance of changes below level II not clear because of possible fluctuations of coast line

Arkansas—Dark Hollow Peat

<i>Level</i>	<i>Depth in ft.</i>	<i>Southern Pine</i>	<i>Hickory</i>	<i>Sweet gum</i>	<i>Oak</i>	<i>Sour gum</i>	<i>Others</i>
I	2	.31	.01	.01	.44	.11	.12
II	5	.04	.09	.04	.72	.00	.11

has been worked out by De Geer,¹⁸ it is of interest to know whether they also agree in point of time. To date the only basis for an estimate in the eastern United States (pending the outcome of studies by Antevs¹⁹ and others on clay laminae) is the rate of peat formation. Clearly this is a matter which varies with many conditions, notably moisture and temperature. Dachnowski²⁰ estimates two centuries per foot, while Soper and Osbon²¹ give an estimate of five to ten centuries. The writer has made some preliminary studies by freezing pieces of peat and cutting them vertically into thin sections. In certain types of peat at least this reveals alternating layers of cellular and gelatinous material of a mean combined thickness about $1/25$ of an inch. Should these layers represent winter and summer accumulations, a conventional rate of about three centuries per foot may be assigned for peats in the Ohio region. The Iowa peats in all likelihood accumulated much more slowly. We have thus, if not any absolute measure, at least a means of approach to the chronology represented by our American deposits. On this basis Table 2 has been prepared.

In this table the possible time limits have been fixed by assuming that the thinnest peat might have accumulated at the fastest rate, the thickest at the slowest. In each case it will be noted that the dates fixed by De Geer for Europe fall safely within the generously wide extremes. In addition a closer estimate has been attempted by calculating the Iowa deposits, presumably the slowest, on the basis of Soper and Osbon's minimum rate, and the Ohio deposits on the basis of the writer's measurements. A very decent approximation results—perhaps as good as can be hoped for on any conventional basis. Much more work needs to be done, but for the present at least it appears reasonable to assume that post-glacial climates in North America were not only similar in sequence to those of Europe, but fairly contemporaneous with them.

A known sequence of climatic changes and a reasonably certain chronology being at hand, certain interesting applications suggest themselves at once.

Beginning first with the extreme northeast, while the climatic fluctuations indicated by Auer's studies²² are real and perceptible, nevertheless the

¹⁸ G. A. De Geer, *Geochronology of the Last 12000 Years*, *Compte Rendu. Congr. Geol. Inst. a Stockholm*, 1910:241-253, 1912.

¹⁹ E. Antevs, *Retreat of the Last Ice Sheet in Eastern Canada*, *Geol. Surv. Can. Mem.* 146:1-142, 1925.

²⁰ A. P. Dachnowski, *Peat Deposits*, *Geol. Surv. Ohio*, 4 Ser. Bul. 16, 1912.

²¹ E. K. Soper and C. C. Osbon, *The Occurrence and Uses of Peat in the United States*, *U. S. Geol. Surv. Bul.* 728:12-13, 1922.

²² *Peat Bogs in Southeastern Canada*.

TABLE 2. Basis for chronological estimate of post-glacial climatic maxima in North America

Climate	Depth from surface as feet			Time as years ago				European Periods	
	Ohio	Indiana	Iowa	Possible limits	Iowa (Soper-) (Osborn) (Scale)	Ohio (Sears-) (Scale)	(De Geer) (Scale)	Designation	
Present	0	0	0	0	0	0	0	Sub-atlantic	
Transition	4	3	2	400-4000	1000-2000	1200	1900	End of sub-boreal	
Warm continental maximum	11	5	4	800-11000	2000-4000	3300	1900-4000	Sub-boreal	
Humid maximum	20	11	6	1200-20000	3000-6000	6000	4000-7000	Atlantic	
Cool continental maximum	24-25	17	8	1600-25000	4000-8000	7200-7500	7000-9000	Boreal	
Cold humid	35	-	-			10500	9000-11000	Sub-arctic	

actual effect in permitting cultural diversity could not have been great. Coniferous forest seems to have been predominant in lower Canada throughout, although changing in aspect. For a race dependent for its highest development on maize, and lacking the small grains which thrive at higher latitudes, this implies a serious and consistent limitation. It is not surprising, then, that we find only two cultural strata in Maine, and three in the Iroquois country. Such short-season corns as the Indians had developed were of course usable under these conditions, but naturally give a limited yield, while the vigorous growth of forest, abundance of fish and game, rigorous winters, and tendency of much of the land when cleared to become acid were in no sense, at any time, a stimulus to agriculture.

Passing next to Iowa, we see that twice during the period since the retreat of coniferous forest this state, so admirably adapted to maize production, has been invaded by dry steppe conditions. There is no reason to suppose that the bison was not present throughout the entire period, but it is a serious question whether high yields of maize were possible during the more arid times. The effect of such periods would be to force its culture, if present, eastward. But during the first of these periods, Ohio and Indiana at least, with their birch and northern pines, must have been suitable for nothing better than the short-season maizes. During the second period of aridity in Iowa, conditions were at their optimum for high maize yields to the eastward. *A priori* it would seem most reasonable to postulate the highest development of stable cultures in Iowa as of levels I and III.

The problem of climatic changes in Arkansas and the adjoining lower Mississippi regions is as vital as that of the still too little known archaeology of this part of the continent. The recent discovery of peat in the Little Rock region and its analysis²³ as given in Table I shows that this region was affected by the drying conditions of level II, giving it the vegetation of east central Oklahoma. As to events of an earlier time we have little evidence yet. There is in central Oklahoma, in Caddo county, a series of deep sheltered canyons with ample seepage water, where sugar maple, buckeye, walnut, and northern red oak are predominant. This has every appearance of being a relict community. If so, it must date back at least to the humid conditions of level III. Should this be the case, it would mean the westward extension at one time of favorable moisture conditions almost to the eastern outliers of the pueblo cultures as found in the caves of Cimmaron county in the Oklahoma panhandle.

Granting this supposition, when the desiccation of level II began, there

²³ Sears and Couch, *loc. cit.*

would be a shifting eastward and northward of favorable agricultural conditions which could be followed up by any agricultural people already present in the Southwest. As the zone of semi-arid steppe widened, this movement would become a necessity as well as an opportunity. The actual known Southwestern sites are of course much later than the period of these changes, but the possibility of transfer toward the Ohio valley of maize culture of a high type by the advance into and withdrawal from the Southwest of humid conditions more than 3000 years ago deserves to be noted.

Coming finally to the problem of the Ohio valley itself, we have there every indication of stratum III in Ohio, and probably Indiana; the presence of northern conifers and allied plants indicates conditions only moderately if at all favorable to maize culture. The dry cool conditions of level IV undoubtedly favored the eastward extension of bison until the development of heavy beech and mixed deciduous forest cover during the deposition of level III, when this animal must have moved westward into the succulent prairies, which were then replacing the dry steppe conditions of level IV in Iowa.

The humid conditions of level III would appear *a priori* to favor hunting and fishing, and the utilization of numerous wild food plants, notably nuts and fruits. The temperature must have permitted, perhaps encouraged, the growing of maize, although the climate was not ideal for it. Any hunting, semi-agricultural remains of considerable antiquity and lacking the buffalo might well be attributed to this level, whose approximate maximum must have been at least 5500 years ago. It is, however, doubtful whether archaeologists at present would consent to assign any remains in this region to such an early date.

It is to the drier conditions of level II that we may most reasonably look for the first ideal conditions for an extensive culture based on wide utilization of the high-yield types of maize in the Ohio valley. From this period date the numerous relict prairies now remaining far east of their proper climatic limits. Dense forests of beech were replaced by more open stands of oak and hickory. Visibility improved—probably not a small factor in defense of a primitive agricultural community. The buffalo once more ranged eastward, to remain until nearly 1800.

As noted in the discussion of Arkansas, at this time the dry steppes belt of the West expanded, making migration northeastward not only permissive but doubtless compulsory, assuming that the lower prairie regions were then occupied by growers of high-yield maize.

It must be emphasized that whoever the inhabitants of the Ohio valley were at this time, or whence they came, they enjoyed the optimum condi-

tions afforded during post-glacial time for the development of a successful agricultural civilization. Rich and varied soils of glacial origin, abundant game including the bison, open country with numerous groves of useful kinds of wood, streams easily navigable and full of fish, all favored such a development.

The intrusive character of the highest mound cultures and the subsequent repossession of their sites by Algonkians²⁴ is exactly what we might expect if the eastward extension of the corn-belt conditions was a significant factor in such mound cultures.

If we may judge by the persistence of relict vegetation in favorable localities many effects of this dry period of level II may have long outlasted the actual climatic turn towards the more humid conditions of today. This is significant. Although dry conditions were at their maximum about 3000 years back, we must remember that such was their influence that any final assignment of dates for the higher cultures in Ohio up to 900 years ago is not unreasonable.

Slowly since this maximum, there has been an increase of those species requiring greater humidity. Whether the increased humidity has been absolute, or merely relative owing to lowering temperature is not certain. But the effect is clear. The density of the forest increased, and savannah began to wane. Optimum conditions for maize culture shifted westward. One practical result was a lessened security from predacious bands representing forest cultures. It is not necessary to postulate any overwhelming invasion. The slow but steady decrease of the radius about a community which could be safely farmed would have its effect. Whether the shift of cultures was complete before the profound readjustments occasioned by the first white contacts on the Atlantic coast does not appear. But the fact remains that when the whites appropriated Ohio, they displaced simpler cultures than those which had gone before, and cultures decidedly in better equilibrium with the then characteristic forest climate.

Some years ago Miss Anna Shepherd studied the possibility of correlating the archaeological sites in Ohio as given by Mills²⁵ with the native vegetation at the time of white settlement as mapped by the writer.²⁶ No correlation appeared, nor is it to be wondered at in the light of the foregoing, for human occupation may have developed in relation to more than one distinct climatic pattern of vegetation.

Table 3 summarizes the material just presented. Levels are numbered,

²⁴ Shetrone, *loc. cit.*

²⁵ W. C. Mills, *An Archaeological Atlas of Ohio*, Ohio State Arch. and Hist. Soc., 1914.

²⁶ The Natural Vegetation of Ohio, *op. cit.*

YEARS	CLIMATES	S.E. CANADA	OHIO	INDIANA	IOWA	VIRGINIA	ARKANSAS
1000	HUMID	SPRUCE-PINE-HEMLOCK <i>Favorable to Predatory Forest Hunters & Limited Agric.</i>	MIXED FOREST <i>Considerable Maize Waning Bison Increasing Forest</i>		PRAIRIE-OAK-HICKORY <i>Sub humid Maize optimum</i>	MIXED FOREST	OAK-PINE-GUM
2000							
3000	WARM	PINE-BIRCH-OAK	OAK-HICKORY-SAVANNA		AMARANTH-GRASS <i>Semi Arid</i>	PINE-OAK-HICKORY	OAK-HICKORY
4000							
5000							
6000	HUMID	HEMLOCK-PINE	OAK-BEECH <i>Maize Culture Possible Denise Forest Probably No Bison</i>	MIXED FOREST <i>Extension of Favorable Climate into Southwest</i>	PRAIRIE <i>Sub Humid</i>		
7000							
8000	COOL	PINE-BIRCH	PINE-OAK	OAK-BIRCH SAVANNA <i>Slight Possibility of Maize Cool Open Country Probably Bison</i>	AMARANTH-GRASS <i>Semi Arid</i>		
9000							
10000	COLD HUMID		SPRUCE-PINE-FIR <i>Probably Hunting Only</i>		CONIFERS		

TABLE 3. Suggested chronology of post-glacial changes in climate and vegetation, eastern North America, with inferred cultural influences.

dated approximately and designated as to climatic maximum they represent. The characteristic vegetation for each of the six regions at each level is indicated and the depth of the strata shown. Below the data for each level are noted certain inferences as to cultural relations. The task of checking these inferences and correcting or adding to them now lies with students of archaeology, to whose field work we must always turn as our court of last resort.

In closing it may not be amiss to suggest the importance of checking muds, clays, and peats whose cultural connection is clear, for samples of contemporaneous pollen. If such pollen is present in reasonable quantities it may assist materially in dating the related culture. To Doctor Forrest Clements the writer is indebted for a reminder of the extreme importance of looking for maize pollen in peats and elsewhere. This is a characteristic smooth thin-walled ovoid with one pore, and a diameter (90 μ) considerably greater than that of the majority of grass pollen. Such peats as the Amanda deposit in Fairfield county, Ohio, might profitably be searched for evidence of this character.

SUMMARY

The general discontinuity of prehistoric cultural remains in the eastern United States has been discussed in relation to known fluctuations of post-glacial climate. The evidence for these fluctuations and their character have been presented and a tentative chronology worked out which appears to be correlative with that of northern Europe. In particular, the effect of a recent warm dry climate in shifting the maize optimum eastward for a time has been advanced as a reasonable cause for intrusion of such cultures as the Hopewell into a region previously and subsequently more primitive.

The writer wishes to acknowledge his debt to Professors Forrest E. Clements and C. W. Thornthwaite for their trouble in reading the manuscript, and to the National Research Council and the University of Oklahoma for assistance during the course of studies here utilized.

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CHINESE RELATIONSHIP TERMS

By T. S. CHEN and J. K. SHRYOCK

INTRODUCTION

CHINA offers a unique field for the study of relationship terms. Chinese civilization has endured continuously for a longer period than any other. That the family is the basis of society is perhaps more true of China than of any other highly developed nation, hence the Chinese have been interested in relationship terms from ancient times until the present. Most modern studies in relationship terms have been made among primitive peoples whose illiteracy has made it impossible to study such terms in their historical development. But in China a vast literature extends continuously over the last three thousand years and permits the scholar to trace the use and development of terms through a much longer period than anywhere else. As the Chinese have always been interested in relationship terms, the material for such a study has in large measure already been collected. Much of the labor which must be undertaken by anyone working among pre-literate peoples has already been done, enough material being readily available for translation in such works as the *Tsu yüan* and the *Chung hua ta tsu tien* to make possible an adequate study. It is not necessary to search through the ancient literature to see how terms have been used, for that work has already been done. It is not necessary to question numerous informants about the meaning of their terms, for the Chinese have studied these themselves, in most cases for at least two thousand years, and have carefully defined them. The chief work necessary is to translate the evidence, arrange it according to modern methods of research, and critically examine it. This study, which does not pretend to be exhaustive, is an attempt to make a beginning at this task.

The ancient literature of China, particularly the Confucian canon, contains practically all the relationship terms recognized today, except for colloquial usage. One work of the canon, the *Erh ya*, is a dictionary of terms used in the canonical writings, one section being devoted to relationship terms. This section, with a commentary on it written in the fourth century of our era, has been translated in this study. The *Tsu yüan*, a source book of words and phrases published in 1915, and similar books, list the uses of terms in the various canonical and other important works. It is therefore possible to begin with the earliest Chinese literature and to trace the use of terms up to the present.

The analysis of the terms thus collected proves that the terms were not used uniformly in the ancient period. There was a good deal of diversity,

especially in the uses of group terms. This is to be expected, for at the time the canon was composed, roughly the first millennium B.C., there were no authoritative and generally accepted standards. As Karlgren has shown, the use of particles in the canonical writings indicates that there were several dialects in ancient Chinese. The variation in the use of some relationship terms appears to confirm this thesis, but no attempt is made here to develop any conclusions from such evidence.

About 136 B.C., under the Han emperor Wu, certain Confucian principles were adopted as the policy of the state. A system of schools was developed during the next two centuries in which the Confucian canon was the basis of education. By the Eastern Han period, which began in A.D. 25, this canon had been generally fixed. A system of terms based upon it became the standard, and as the canon remained the basis of education until the twentieth century, most of the nomenclature has remained in use until the present. A somewhat analogous situation exists in Christianity, where there is a system of doctrine based on the Bible and the fathers of the early Church, although a careful examination shows that these authorities do not agree among themselves. The colloquial use of relationship terms has probably varied throughout China at all times, and no attempt has been made here to collect and compare various colloquial usages, though a few instances have been mentioned. It has not seemed necessary, because there is a standard terminology based on the canon. This standard of relationship terms has been incorporated into the legal system as the basis for a part of the criminal law, and in other ways. For instance, it is a capital offense for a son to strike his father, but it is no offense at all for a father to strike his son. The degrees of mourning are also based on these relationship terms. All the terms given in the tables are in general use throughout China today.

This system of terminology represents the ancient usage in Northern China, where the characteristic Chinese civilization arose. By means of the system of schools, and their connection with the civil service, whereby graduates were qualified for official appointments, this regional system was gradually imposed upon the rest of the country. Chinese culture had reached the Yangtse valley in the Chou period (ended 221 B.C.). The system of education was first developed in the western province of Szechuan before it was applied to the rest of the Han empire, and seems to have originated as a deliberate attempt to impose Chinese culture upon aboriginal tribes. Yet in spite of the prolonged effects of this remarkable system, which has given to China whatever unity it possesses through a common written language, a common literature, and to a greater or less extent, the ideas and customs found in that literature, the culture of South China is

quite different from that of North China even today. It would be natural for this difference in culture to be apparent in clan and family organization. Officially the use of relationship terminology is the same, but it is probable that wide variations would be found in colloquial usage. Laufer¹ has shown that there is evidence for totemistic ideas and customs in South China and Indo-China, which are lacking in the characteristically Chinese culture. The only indication presented here for this gradual imposition of Chinese culture upon the southern non-Chinese tribes is the statement made several times in the commentary on the *Erh ya* that by the fourth century of our era, the people of the southeast had adopted certain terms not formerly used by them. A study of the colloquial terminology of South China is very desirable.

Both Kroeber and Lowie have suggested methods of classification as substitutes for the old dualistic division into descriptive and classificatory. Kroeber suggested six criteria, which may be applied to the Chinese system.

There is among the Chinese a decided difference between "generations." Each clan has a poem of about twenty syllables or words. Since each word serves as the name of a "generation" of the clan, as the system has been in use for a long time, and since a man may have children when he is well on in years, all twenty "generations" may have living representatives at the same time. "Generation" here, means those removed by a certain number of generations, father and son, from a common ancestor. Besides this distinction of generations by use of a syllable of the personal name, the table of terms shows that each generation is distinguished by certain modifiers, with the exception of the generation of the speaker, which is the starting-point. This terminology extends for four generations above and four below the speaker.

There is also a clear distinction between lineal and collateral kin. Pao is used as a modifier for lineal kin, and a number of terms used as modifiers, t'ang, tsai tsung, and tsu, in the speaker's generation indicate the collateral lines descending from the father's father, father's father's father, and father's father's father's father, respectively.

Within the speaker's generation, all persons, both male and female, are divided into two classes, those older and those younger than he. Above and below his generation, the brothers of the lineal representative of the speaker (father, grandfather, etc.) in that generation, are divided into classes, depending on whether they are older or younger than the lineal

¹ Totemic Traces in Indo-China.

representative in that generation. The males of collateral lines are not so divided except in the speaker's generation. Neither males nor females are so divided in the mother's clan, nor are females in the father's clan except in the speaker's generation. The brothers and sisters of both husband and wife (members of the generation of the speaker) are so divided.

In general the same terms are used, whether the speaker is a man or woman. There are a number of obvious exceptions in such terms as husband and wife. There appears to be an increasing tendency for spouses to use the same terms, i.e. the wife will address the members of the husband's clan in the same way as her husband, although a number of separate terms are provided. But brother and sister will use the same terms within their own clan. In the tables, unless otherwise stated, the speaker is assumed to be a man. There are also differences due to the sex of the connecting relative, the modifiers and in some instances the independent elements in the terms being different in the father's and mother's clans.

The difference between consanguinity and affinity is clearly defined, except in those relationships which are affected by the cross-cousin marriage.

Whether a relative is living or dead is shown by the modifier, and in a few instances (parents and father's parents) by the whole term. But there does not appear to be any difference in terminology when a connecting relative is dead.

Lowie's system of classification is based on the treatment of collateral as compared with lineal kin in the first ascending and descending generations. On this basis he defines four types of systems; generation, bifurcate merging, bifurcate collateral, and lineal. Lowie² says of the Chinese system Its present form is puzzling. . . . Morgan vacillated between calling it Malayan or Turanian, i.e. a generation or a bifurcating merging system (*ibid*).

Lowie inclines to the bifurcate merging system for the Chinese, partly on account of the systems of "primitive Sinitic languages," i.e. those of various groups of Naga in Burma. But Laufer³ has shown that family and clan organization in South China and Indo-China have traits which cannot be shown to have existed in the characteristic Chinese culture at any time. It is still a question whether Chinese culture has closer affinities with the north or the south, and because the Chinese language appears closer to the languages of the Indo-Chinese peninsula than to those to the north, it is not at all certain that the Chinese, or proto-Chinese relationship systems corresponded to those of the peoples of Indo-China. Lowie's opinion of the

² Encyl. Brit., 12th Ed., Art. "Relationship Terms "

³ *Op. cit.*

Chinese system appears to be based on accounts by Ching-chao Wu⁴ and F. W. Baller⁵, neither of which is complete or documented.

Lowie considers that when siblings are set off from parents by mere modifiers of the primary "parent" stem, the system is bifurcate merging. This does not appear to be the case with the Chinese terms, since the terms for siblings are altogether different from the parental terms. The Chinese terms for father (fu), father's brothers (po and shu), and mother's brother (chiu), are different. The terms for mother (mu), father's sister (ku), and mother's sister (yi), are also different. Po and shu may be used either as independent elements, or with fu, and ku and yi may be combined with mu or used separately. It appears that fu and mu are used both as terms for father and mother, and as terms for the men and women of the father's generation, i.e. as generation terms. The terms for son (tzu), brother's son (chih), and sister's son (wai sheng), are different. The son's son of the father's brother is called t'sang chih (nephew of a collateral line going back two generations) and the son's son of the mother's brother is called piao chih (nephew belonging to another clan). The women of the son's generation are differentiated in the same way by modifiers. On the whole, it seems as if the Chinese system should be described as bifurcate collateral, but as Lowie says, the "form is puzzling."

Granet⁶ says,

The family nomenclature takes no account of individuals nor of their natural closeness of relationship

and goes on to say how the terms "father," "mother," "paternal uncle," and "cousin" designate classes and not individuals. These statements are based on the Erh ya, in the section (chap. 4) which is translated in this study. The statements of Granet are hardly accurate. Both Granet and the Erh ya are dealing with the ancient Chinese system, but even the ancient system as described in the Erh ya cannot be called classificatory, since a number of individuals are given terms, and most of the class terms are between members of collateral lines.

The Erh ya appears to take a certain amount of knowledge of the more common terms for granted. For instance, it defines k'ao (father) in terms of fu, which is the common term for father. It does not define the term for "son" at all, although this term is used in the explanation of other terms. The rule of descent through the father, and not through the mother, is

⁴ The Chinese Family, AA 29 316 f.

⁵ A Mandarin Primer, 1911, pp. 369 f.

⁶ The History of Chinese Civilization, p. 135.

assumed and not directly stated. In the ancient literature, the rule that a man could not marry a woman of his own surname is not often explicitly stated, probably because everyone knew it. There is also a rule that husband and wife must belong to the same "generation."

If the English classification into family, descriptive and classificatory systems⁷ be used, the Chinese appears to be a descriptive system. Of the list of terms given,⁸ the Chinese do not have distinctions due to the speaker's sex in the relationships of the father's and mother's clans, nor distinctions between the younger and older sisters of the mother. The lack of distinction between older and younger women of the same generation (except the speaker's generation) are probably due to the ancestral sacrifices and line being carried on by the men, the women becoming members of other clans through marriage. The sacrifices are celebrated by the oldest son, or if he is dead, by the oldest son of the oldest son, who thus becomes more prominent than his paternal uncles.

The modern terminology is clearly based on the *Erh ya*, but is somewhat different. Some terms have been dropped or changed, some are now used only when the person referred to is dead. The modern system is simpler, and at the same time much more inclusive. The greater simplicity is probably due to the fact that the ancient institutions of the sororate, junior levirate and cross-cousin marriage have vanished or largely fallen into disuse. The inclusion of more terms is probably due to the elaboration of the rules of mourning, which divide all the terms given in the tables into five classes, or degrees of mourning. Even in the modern terminology, there is ample evidence for the former existence of the ancient institution.

The sororate has long been known to have existed in ancient China, at least among the nobility. The term *yi* (wife's sisters) is interpreted by the *Tsu yüan*⁹ as indicating the sororate. This is probably also true of the term *ssu* ("secret"), given in the *Erh ya* as the term for "sister's husband." The sororate fell into disuse long ago and is not indicated by the modern terms in a number of places where it might be expected.

Granet mentions the levirate¹⁰ and gives historical instances from the *Tso chuan*. The relationship terms indicate only the junior levirate, in which an older brother marries his deceased younger brother's wife. A wife calls her husband and her husband's older brothers (possible husbands) by the same term, *po*, but uses a different term for his younger brothers. In

⁷ Notes and Queries on Anthropology, p. 66 f.

⁸ *Ibid.*, pp. 49, 50.

⁹ Sect. (1), p. 102

¹⁰ P. 340, pp. 361 f.

modern usage, a man is allowed considerable freedom with his older brother's wives, but must be strictly circumspect toward his younger brothers' wives. If the levirate still exists at all, it is not considered respectable, and would be hard to prove.

Granet also discusses cross-cousin marriage in ancient China.¹¹ The rule forbidding marriage between persons of the same surname eliminated the possibility of marriage between the children of brothers. Added to this rule, the sororate eliminated the possibility of marriage between the children of sisters, who would also have the same surname. Granet cites evidence to show that two clans would stand in a reciprocal relationship such that the members of one clan would always marry members of the other. In the historic period in China, this can hardly be called a dual division, whatever it may have been at an earlier stage. There were many clans which presumably, if Granet is correct, were arranged in pairs by this system. The women of the two clans would be particularly eager for its continuance, as it would bring their own kin into their husband's clan. The children of brothers and of sisters being eliminated, there remained eligible the children of the father's sister and of the mother's brother. It can unquestionably be shown that the emperor's wife's clan nearly always played an important part in Chinese history. Granet has cited some historical evidence, but does not mention the relation between the ruling families of the feudal states of Chin and Ch'in, which would support his theory. How late such arrangements lasted, it is impossible to say.

It is still the custom to present a married couple with scrolls bearing the following complimentary lines:

Marriage connected Ch'in and Chin (the feudal states).
A knot is tied between the Chu and Ch'en clans.

The second sentence refers to a poem by Po Chu-yi, (A.D. 772-846).

In Ku-feng hsien, in the district of Ch'u chou [Kiangsu]
Is a village called Chu Ch'en [the names of the two clans].
There are only two clans there
Which have intermarried for many generations.

This village is also referred to by Su Tung-p'o. It would seem that in some places the custom lasted at least until the ninth century of our era.¹²

The system of relationship terms abundantly supports Granet's theory of the cross-cousin marriage, and may be summarized by terms.

¹¹ Pp. 157 f, p. 209.

¹² Tsu yüan, sect. (2), p. 85

ku is used for:

- (a) husband's mother;
- (b) father's sisters;
- (c) wife's mother (in wai ku);
- (d) husband's younger sisters.

chiu means:

- (a) mother's brother;
- (b) husband's father;
- (c) wife's father (in wai chiu);
- (d) wife's brothers.

In the Erh ya, the term sheng means:

- (a) father's sister's sons;
- (b) mother's brother's sons;
- (c) wife's brothers;
- (d) husbands of the speaker's sisters.

Still further support for the existence of the cross-cousin marriage will be found in notes 33, 34, 39, 42, 44, 51, 61, 64, 65, and 67 to the section which translates the terms given in the tables. The evidence from terminology for cross-cousin marriage in ancient China is very complete. It is an apparent inconsistency that ku and chiu are used for husband's younger sisters and wife's brothers, respectively. The most probable explanation is that both wife and husband politely place themselves in the generation of their own children in addressing the *Geschwister* of their partner who are of the same sex as themselves. Cross-cousin marriage is still permissible in China, but appears to be generally obsolete.

A few other general statements may be made. A Chinese woman is important, not as a wife, but as a mother. Many historic instances might be mentioned, such as the power wielded by empress-dowagers at various times in history. When an empress-dowager used her power, she invariably sought the support of her own clan, and appointed members of it to high positions as well as marrying its women into the imperial clan.

There does not appear to be an instance of avoidance in Chinese terminology, except in the case of people of opposite sexes who might marry. Nor does the joking-relationship appear. There is evidence for a close relation between alternate generations, for instance, the speaker and his son's son. Possibly Granet has laid too much emphasis upon this in his reconstruction of prehistoric Chinese society.

The tables are not exhaustive, but the terms omitted are used very

seldom, if at all. One hundred and seventy-six terms are given for the father's clan, seventy for the mother's, sixteen for the husband's, and eight for the wife's. Eleven terms not appearing in the tables are also described. No attempt has been made to be exhaustive in collecting synonyms and colloquial terms, but a number are given in the notes. In the tables for the clans of the father and mother, terms are included which are really outside the clan, such as "sister's husband." This is not Chinese custom, but seemed advisable for the sake of completeness. All the terms in the tables are made by the use of thirty-three elements.

For the same reason, a section was added describing various terms used for relationship groups. In general, and especially in connection with this last section, it should be remembered that the complex of ideas associated with any given Chinese word may be very different from that associated with any English word, so that it is dangerous to translate such terms. Readers not familiar with Chinese should remember that there are many homophones in that language, and should consider the written word rather than the romanization. For instance, words for "father," "husband," and "wife" are all romanized *fu*, but are in reality different terms. The numbers in parentheses refer to the index, where the Chinese words are given.

The authors desire to express their gratitude to Professor F. G. Speck, Dr. A. I. Hallowell, Dr. Kiang K'ang-hu and Mr. E. Golomshtok, for many suggestions and corrections.

LIST OF TERMS IN THE TABLES¹³

*Table I. The Father's Clan*¹⁴

A. Generation of the father's father's father's father.

1. Kao tsu fu¹⁵ (father's father's father's father).
2. Kao tsu mu (father's father's father's mother).

¹³ This list is a translation of the terms given in the four tables. The terms are by no means exhaustive and could be further elaborated on the same system. No attempt has been made to collect colloquial terms throughout China, only those being registered which appear to be general. A number of synonyms are noted, but the number is not complete. As far as the authors are aware, all the relationships ordinarily given terms in connection with the father's clan have been included in that table. In all the tables, but particularly in the other three, the lists might be elaborated further, especially in tables II and III. This has not been done, because the wife frequently uses the same terms as the husband in referring to his clan, and vice versa. The list of terms was made from four authorities, the *Erh ya*, the *Yi li* (both canonical books), the *Tsu yüan*, and *Chung hua ta tsu tien*. There are other

B. Generation of the father's father's father.

3. Tseng tsu fu (father's father's father).¹⁶
4. Tseng tsu mu (father's father's mother).
5. Tseng po tsu fu (older brother of 3).
6. Tseng po tsu mu (wife of 5).
7. Tseng shu tsu fu (younger brother of 3).
8. Tseng shu tsu mu (wife of 7).
9. Tseng tsu ku mu (sister of 3).
10. Tseng tsu ku fu (husband of 9).

C. Generation of the father's father.

11. Tsu fu (father's father).
12. Tsu mu (father's mother).
13. Po tsu fu (older brother of 11).¹⁷
14. Po tsu mu (wife of 13).
15. Shu tsu fu (younger brother of 11).¹⁸
16. Shu tsu mu (wife of 15).
17. Tsu ku mu (sister of 11).
18. Tsu ku fu (husband of 17).¹⁹
19. Tsu po tsu fu (son of 5 or 7, older than 11).

important Chinese works dealing with relationship terms which were not consulted. The notes are based on the authorities just cited. The letters O, Y, and E in the tables indicate that the person referred to is "older," "younger," or "either older or younger" than the person in that generation whose term is marked with an asterisk.

¹⁴ A more exact title for the table would be "The father's clan and persons connected with it." A glance will show that there are persons mentioned in the table who do not belong to the clan, such as the husbands of women born into the clan. In including relatives by affinity, the authors have departed from the usual Chinese custom for the sake of completeness. These remarks also apply to Table IV.

¹⁵ The words "fu" and "mu" indicate the differences of sex and are used in pairs. But when, for instance, a man refers obviously to his grandfather only, "fu" may be omitted and "tsu" used alone.

¹⁶ The following synonyms may also be used for "father's father's father": tseng tsu wang fu⁽³⁾, tseng ta fu,⁽⁴⁾ and tseng weng.⁽⁵⁾ His wife may be called tseng tsu wang mu⁽⁶⁾. The father's father may be called ta fu,⁽⁷⁾ and the father's mother, ta mu.⁽⁸⁾

¹⁷ For the grandfather's older brother the expressions po weng⁽⁹⁾ and po kung⁽¹⁰⁾ (colloquial) may be used. The colloquial po p'o⁽¹¹⁾ may be used for his wife.

¹⁸ The colloquial terms shu weng⁽¹²⁾ and shu p'o⁽¹³⁾ may be used for the grandfather's younger brother and his wife respectively.

¹⁹ The grandfather's sister's husband may be called colloquially ku kung.⁽¹⁴⁾

20. Tsu po tsu mu (wife of 19).
 21. Tsu shu tsu fu (son of 5 or 7, younger than 11).
 22. Tsu shu tsu mu (wife of 21).
 23. Tsu tsu ku mu (daughter of 5 or 7).
 24. Tsu tsu ku fu (husband of 23).
 25. Piao tsu fu (son of 9).
 26. Piao tsu mu (wife of 25).
- D. Generation of the father.
27. Fu (father).²⁰
 28. Mu (mother).
 29. Po fu (father's older brother).²¹
 30. Po mu (wife of 29).
 31. Shu fu (father's younger brother).²²
 32. Shu mu (wife of 31).²³
 33. Ku mu (father's sister).²⁴
 34. Ku fu (husband of 33).
 35. T'ang²⁵ po fu (son of 13 or 15, older than 27).

²⁰ There are many synonyms for father and mother. A man may call his parents kao t'ang,⁽¹⁵⁾ chung hsuan,⁽¹⁶⁾ yen tzu,⁽¹⁷⁾ or k'ao pi.⁽¹⁸⁾ When he refers to his parents in speaking to others, chia⁽¹⁹⁾ is prefixed to fu and mu, and when they are dead, hsien⁽²⁰⁾ ("former") is prefixed. This use of chia and hsien may be extended to other members of the clan, for instance chia hsiung ("my brother") of hsien shu ("my deceased uncle"). Some of the terms in the Erh ya, for instance, k'ao⁽²¹⁾ ("father"), pi⁽²²⁾ ("mother") and wang fu⁽²³⁾ ("father's father") are now used only when these persons are dead. In referring to a member of the clan younger than himself, the speaker may use the word sheh;⁽²⁴⁾ for instance, sheh chih⁽²⁵⁾ ("my nephew"). When the speaker refers to a relative of the person addressed, he prefixes the word ling;⁽²⁶⁾ for instance, ling ti⁽²⁷⁾ ("your younger brother"). In polite usage, the speaker would refer humbly to his own children, but flatteringly to another's children, and so on. Among the colloquial synonyms for father are fu ch'in,⁽²⁸⁾ tei tei,⁽²⁹⁾ pa pa,⁽³⁰⁾ and yei yei.⁽³¹⁾ Among the colloquial synonyms for mother are mu ch'in,⁽³²⁾ ma ma,⁽³³⁾ niang,⁽³⁴⁾ and a ma⁽³⁵⁾ (amah).

²¹ According to the Erh ya, the father's older brother and his wife were called shih fu⁽³⁶⁾ and shih mu.⁽³⁷⁾ Colloquially, po po⁽³⁸⁾ is used for po fu.

²² According to ancient usage, fu tzu⁽³⁹⁾ ("father and son") was used for shu chih⁽⁴⁰⁾ ("uncle and nephew").

²³ Shen mu⁽⁴¹⁾ is used colloquially for shu mu.

²⁴ An ancient expression for father's sister was ku tzu mei.⁽⁴²⁾ A modern colloquial expression is ku ku.⁽⁴³⁾ Ku fu⁽⁴⁴⁾ is sometimes used instead of ku fu⁽⁴⁵⁾ for her husband.

²⁵ According to the Erh ya, tsung tsu may be used instead of t'ang. The father's father's brother's son may be called tsung tsu fu,⁽⁴⁶⁾ etc.

36. T'ang po mu (wife of 35).
37. T'ang shu fu (son of 13 or 15, younger than 27).
38. T'ang shu mu (wife of 37).
39. T'ang ku mu (daughter of 13 or 15).
40. T'ang ku fu (husband of 39).
41. Tsu po fu (son's son of 5 or 7, older than 27).
42. Tsu po mu (wife of 41).
43. Tsu shu fu (son's son of 5 or 7, younger than 27).
44. Tsu shu mu (wife of 43).
45. Tsu ku mu (son's daughter of 5 or 7).
46. Tsu ku fu (husband of 45).
47. Piao po fu (son of 17, older than 27).
48. Piao po mu (wife of 47).
49. Piao shu fu (son of 17, younger than 27).
50. Piao shu mu (wife of 49).
- E. The generation of the speaker.
 51. Pen shen²⁶ (self: the speaker).
 52. Ch'i (wife).²⁷
 53. Pao hsiung (older brother).²⁸
 54. Pao sao (older brother's wife).
 55. Pao ti (younger brother).
 56. Pao ti fu (younger brother's wife).
 57. Pao tzu (older sister).²⁹
 58. Pao tzu fu (older sister's husband).³⁰
 59. Pao mei (younger sister).
 60. Pao mei fu (younger sister's husband).
 61. T'ang hsiung (father's brother's son, older than the speaker).

²⁶ The speaker is a male. His sister would use the same terms.

²⁷ Among the synonyms for wife are fu, ⁽⁴⁷⁾ nei jen, ⁽⁴⁸⁾ nei tzu ⁽⁴⁹⁾ and nei tsu ⁽⁵⁰⁾. A wife may be politely addressed as fu jen ⁽⁵¹⁾ (originally a term for the wives of nobles), t'ai t'ai, ⁽⁵²⁾ or shih mu. ⁽⁵³⁾ Niang ⁽⁵⁴⁾ is used colloquially in various forms.

²⁸ Brothers may be called kuan chi, ⁽⁵⁴⁾ or kuan yu ⁽⁵⁵⁾. Kuan and ko ⁽⁵⁶⁾ may be used for hsiung. Half-brothers with the same mother are called wai hsiung ti. An older brother may be called mu hsiung, ⁽⁵⁷⁾ and the younger, mu ti. ⁽⁵⁸⁾ The oldest brother may be called chang hsiung, ⁽⁵⁹⁾ po hsiung ⁽⁶⁰⁾ or ta hsiung. ⁽⁶¹⁾

²⁹ Cheh ⁽⁶²⁾ is commonly used for tzu. Nu hsiung ⁽⁶³⁾ and nu ti ⁽⁶⁴⁾ may be used for older and younger sister respectively. The oldest sister may be called chang tzu ⁽⁶⁵⁾ or po tzu. ⁽⁶⁶⁾

³⁰ Tzu chang ⁽⁶⁷⁾ or tzu hsu ⁽⁶⁸⁾ may be used for "older sister's husband," and mei chang ⁽⁶⁹⁾ or mei hsu ⁽⁷⁰⁾ for "younger sister's husband."

62. T'ang sao (wife of 61).
63. T'ang ti (father's brother's son, younger than the speaker).
64. T'ang ti fu (wife of 63).
65. T'ang tzu (father's brother's daughter, older than the speaker).
66. T'ang tzu fu (husband of 65).
67. T'ang mei (father's brother's daughter, younger than speaker).
68. T'ang mei fu (husband of 67).
69. Tsai tsung hsiung (son's son of 13 or 15, older than speaker).
70. Tsai tsung sao (wife of 69).
71. Tsai tsung ti (son's son of 13 or 15; younger than speaker).
72. Tsai tsung ti fu (wife of 71).
73. Tsai tsung tzu (son's daughter of 13 or 15, older than the speaker).
74. Tsai tsung tzu fu (husband of 73).
75. Tsai tsung mei (son's daughter of 13 or 15, younger than the speaker).
76. Tsai tsung mei fu (husband of 75).
77. Tsu hsiung (son's son's son of 5 or 7, older than the speaker).
78. Tsu sao (wife of 77).
79. Tsu ti (son's son's son of 5 or 7; younger than the speaker).
80. Tsu ti fu (wife of 79).
81. Tsu tzu (son's son's daughter of 5 or 7, older than the speaker).
82. Tsu tzu fu (husband of 81).
83. Tsu mei (son's son's daughter of 5 or 7, younger than the speaker).
84. Tsu mei fu (husband of 83).
85. Piao³¹ hsiung³² (father's sister's son, older than the speaker).
86. Piao sao (wife of 85).
87. Piao ti (father's sister's son, younger than the speaker).
88. Piao ti fu (wife of 87).
89. Piao tzu (father's sister's daughter, older than the speaker).
90. Piao tzu fu (husband of 89).
91. Piao mei (father's sister's daughter, younger than speaker).
92. Piao mei fu (husband of 91).³³

³¹ The dependent elements t'ang, tsai tsung, and tsu indicate in the speaker's generation the collateral lines descending from the father's father, father's father's father, and father's father's father's father, respectively. Pao indicates the same father, or siblings.

³² Wai⁽⁷¹⁾ may be used instead of piao in such terms as piao hsiung ti.⁽⁷²⁾

³³ Terms 85-92 are the same as terms 17-24 in Table IV, the children of the mother's brother. This usage indicates the cross-cousin marriage.

93. T'ang piao hsiung (son of 39, i.e. of father's father's brother's daughter, older than the speaker).
94. T'ang piao sao (wife of 93).
95. T'ang piao ti (son of 39, younger than the speaker).
96. T'ang piao ti fu (wife of 95).³⁴
- F. Generation of the son
 97. Tzu (son).³⁵
 98. Tzu fu (son's wife).
 99. Nü (daughter).
 100. Hsü (daughter's husband).³⁶
 101. Chih (brother's son).
 102. Chih fu (wife of brother's son).
 103. Chih nü (brother's daughter).³⁷
 104. Chih hsü (husband of brother's daughter).
 105. Wai sheng (sister's son).
 106. Wai sheng fu (wife of sister's son).
 107. Wai sheng nü (sister's daughter).
 108. Wai sheng hsü (husband of sister's daughter) ³⁸
 109. T'ang chih (son of father's brother's son).
 110. T'ang chih fu (wife of 109).
 111. T'ang chih nü (daughter of father's brother's son).
 112. T'ang chih hsü (husband of 111).
 113. T'ang wai sheng (son of father's brother's daughter).

³⁴ Terms 93-96 are the same as terms 33-36 in Table IV, mother's father's brother's son's sons and their wives. In the same way, the terms for father's father's brother's daughter's daughters, which are not given in Table I, would be the same as terms 37-40 in Table IV. Under the cross-cousin marriage, these corresponding groups would be identical.

³⁵ *Ti tzu*⁽⁷³⁾ may be used for the wife's son; *tsung tzu*⁽⁷⁴⁾ indicates the wife's oldest son, and *yu tzu*⁽⁷⁵⁾ the wife's younger sons. These terms would be used by the speaker for his wife's sons by a former marriage. A concubine's son is called *su tzu*.⁽⁷⁶⁾ The son of a concubine of a feudal lord of the ancient period was called *pieh tzu*.⁽⁷⁷⁾ *Erh*⁽⁷⁸⁾ may be used for *tzu*. In writing or speaking to his parents, a son calls himself *nan*⁽⁷⁹⁾ or *erh*.⁽⁷⁸⁾ There are other terms, ancient and colloquial such as *shih*⁽⁸⁰⁾ now commonly but not correctly used in *shih fu*⁽⁸¹⁾ (son's wife), and for the wives of those of a lower generation than the speaker.

³⁶ Other expressions for *hsü* are *nü hsü*,⁽⁸²⁾ and *tzu hsü*.⁽⁸³⁾

³⁷ In this expression the words are sometimes reversed.

³⁸ *Wai* is used for relatives not of the same clan. This group is placed before that beginning with *t'ang* because the former relations are closer to the speaker biologically.

114. T'ang wai sheng fu (wife of 113).
 115. T'ang wai sheng nü (daughter of father's brother's daughter).
 116. T'ang wai sheng hsü (husband of 115).
 117. Piao chih (son of father's sister's son).
 118. Piao chih fu (wife of 117).
 119. Piao chih nü (daughter of father's sister's son).
 120. Piao chih hsü (husband of 119).³⁹
 121. Tsai tsung chih (son's son's son of 13 or 15).
 122. Tsai tsung chih fu (wife of 121).
 123. Tsai tsung chih nü (son's son's daughter of 13 or 15).
 124. Tsai tsung chih hsü (husband of 123).
 125. Tsai tsung wai sheng (son's daughter's son of 13 or 15).
 126. Tsai tsung wai sheng fu (wife of 125).
 127. Tsai tsung wai sheng nü (son's daughter's daughter of 13 or 15).
 128. Tsai tsung wai sheng hsu (husband of 127).⁴⁰
 129. Tsu chih (son's son's son's son of 5 or 7).
 130. Tsu chih fu (wife of 192).
 131. Tsu chih nü (son's son's son's daughter of 5 or 7).
 132. Tsu chih hsü (husband of 131).
- G. Generation of the son's son.
133. Sun (son's son).⁴¹
 134. Sun fu (wife of son's son).
 135. Sun nu (son's daughter).
 136. Sun hsü (husband of son's daughter).
 137. Chih sun (son's son of brother).
 138. Chih sun fu (wife of 137).
 139. Chih sun nü (son's daughter of brother).
 140. Chih sun hsü (husband of 139).
 141. Wai sun (daughter's son).
 142. Wai sun fu (wife of daughter's son).
 143. Wai sun nü (daughter's daughter).
 144. Wai sun hsü (husband of daughter's daughter).

⁹ Terms 117-120 are the same as terms 41-44 and 45-48 in Table IV, the grandchildren of the mother's brother. Under the cross-cousin marriage, these groups might be identical.

⁴⁰ In ordinary conversation, long terms like this are not used. Some of the terms, for instance, tsai tsung, are ordinarily omitted. This also applied to the other long terms in the list.

⁴¹ Sun tzu⁽⁸⁴⁾ or sun erh⁽⁸⁵⁾ may be used for sun, and in the expression sun nü, the words may be interchanged.

145. Wai chih sun (brother's daughter's son).
146. Wai chih sun fu (wife of 145).
147. Wai chih sun nü (brother's daughter's daughter).
148. Wai chih sun hsü (husband of 147).
149. Wai sheng sun (sister's son's son).
150. Wai sheng sun fu (wife of 149).
151. Wai sheng sun nu (sister's son's daughter).
152. Wai sheng sun hsü (husband of 151).
153. T'ang chih sun (son's son's son of father's brother).
154. T'ang chih sun fu (wife of 153).
155. T'ang chih sun nü (son's son's daughter of 29 or 31).
156. T'ang chih sun hsü (husband of 155).
157. Piao chih sun (son's son's son of father's sister).
158. Piao chih sun fu (wife of 157).
159. Piao chih sun nü (son's son's daughter of 33).⁴²
160. Piao chih sun hsu (husband of 159).
161. Tsai tsung chih sun (son's son's son's son of 13 or 15).
162. Tsai tsung chih sun fu (wife of 161).
163. Tsai tsung chih sun nü (son's son's son's daughter of 13 or 15).
164. Tsai tsung chih sun hsü (husband of 163).
165. Tsu chih sun (son's son's son's son's son of 5 or 7).
166. Tsu chih sun fu (wife of 165).
167. Tsu chih sun nü (son's son's son's son's daughter of 5 or 7).
168. Tsu chih sun hsü (husband of 167).
- H. Generation of son's son's son.⁴³
 169. Tseng sun (son's son's son).
 170. Tseng sun fu (wife of son's son's son).
 171. Tseng sun nü (son's son's daughter).
 172. Tseng sun hsü (husband of 171).
- I. Generation of the son's son's son's son.
 173. Hsuan sun (son's son's son's son).
 174. Hsüan sun fu (wife of 173).
 175. Hsuan sun nü (son's son's son's daughter).
 176. Hsüan sun hsü (husband of 175).

⁴² The terms 157 and 159 are the same as terms 55 and 56 in Table IV (the great-grandchildren of the mother's brother). This usage is another indication of the cross-cousin marriage.

⁴³ The terms for the generations of the son's son's son and of the son's son's son's son can be elaborated in the same way as for the higher generations, but the terms would not ordinarily be used.

Table II. Terms Used by the Husband for His Wife's Clan

1. Yo fu (wife's father).⁴⁴
2. Yo mu (wife's mother).⁴⁵
3. Chiu hsiung (wife's older brother).
4. Chiu sao (wife of 3).
5. Chiu ti (wife's younger brother).
6. Chiu ti fu (wife of 5).⁴⁶
7. Yi tzu (wife's older sister).
8. Yi tzu fu (husband of 7).
9. Yi mei (wife's younger sister).
10. Yi mei fu (husband of 9).⁴⁷
11. Nei chih (wife's brother's son).
12. Nei chih fu (wife of 11).
13. Nei chih nu (wife's brother's daughter).
14. Nei chih hsu (husband of 13).
15. Nei chih sun (son of wife's brother's son).
16. Nei chih sun nu (daughter of wife's brother's son).⁴⁸

⁴⁴ In the Erh ya, wai chiu and wai ku (literally "uncle and aunt outside the clan") are used. This ancient usage indicates the cross-cousin marriage. In modern usage, yo fu and yo mu are the most common terms. Yo means "a high mountain," Chang jen,⁽⁹⁶⁾ the name of one of the peaks of T'ai Shan, has been used for "father-in-law," and also for "father's father," since the Han period. Correspondingly, ching mu has been used for "mother-in-law" (T.Y., sect.⁽⁸⁷⁾ p. 20). From this use of ching jen, a peak of T'ai Shan, t'ai shan,⁽⁸⁸⁾ really the name of the mountain, gradually came to be used as "father-in-law." As the opposite of "mountain" is "water," t'ai shui⁽⁸⁹⁾ came to be used for "mother-in-law" (T.Y., sect.⁽⁹⁰⁾ p. 66). Still later, yo ("high mountain") was substituted in common usage (T.Y., sect.⁽⁹¹⁾ p. 139). Other terms used for "wife's father" are wai chiu,⁽⁹²⁾ yo chang,⁽⁹³⁾ weng,⁽⁹⁴⁾ and fu kung.⁽⁹⁵⁾

⁴⁵ Po or shu may be prefixed to yo fu or chang jen to indicate the wife's father's brothers, and a whole system elaborated, but the husband would usually adopt the same terms used by his wife for her clan. Other terms used for "wife's mother" are wai ku⁽⁹⁶⁾ and chang mu.⁽⁹⁷⁾

⁴⁶ Other terms used are nei hsiung⁽⁹⁸⁾ ("wife's older brother"), ch'i sao⁽⁹⁹⁾ ("wife's older brother's wife"), nei ti⁽¹⁰⁰⁾ ("wife's younger brother"), and nei ti fu⁽¹⁰¹⁾ ("wife's younger brother's wife").

⁴⁷ The wife's younger sister may also be called nei mei.⁽¹⁰²⁾

⁴⁸ Terms 7-10 are the same as terms 29-32 in Table IV; that is, the daughters of the wife's mother and of the wife's mother's sister seem to be classed together. This appears to be an inconsistency, except on the assumption of the sororate, in which case the wife's mother and the wife's mother's sister would have the same husband.

*Table III. Terms Used by the Wife for Her Husband's Clan*Fu (husband).⁴⁹

1. Chiu (husband's father).⁵⁰
2. Ku (husband's mother).⁵¹
3. Po (husband's older brother).⁵²
4. Szu fu (husband's older brother's wife).⁵³
5. Shu (husband's younger brother).
6. Ti fu (husband's younger brother's wife).⁵⁴
7. Hsiao ku (husband's younger sister).⁵⁵
8. Ku fu (husband's sister's husband).⁵⁶

*Table IV. The Mother's Clan.*⁵⁷

A. Generation of the mother's father's father.

1. Wai tseng tsu fu (mother's father's father).

⁴⁹ Among the other terms which may be used for "husband" are wai tzu,⁽¹⁰³⁾ chang fu,⁽¹⁰⁴⁾ fu chün,⁽¹⁰⁵⁾ hsu,⁽¹⁰⁶⁾ fu hsu⁽¹⁰⁷⁾ and po.⁽¹⁰⁸⁾

⁵⁰ Weng⁽⁹⁴⁾ may also be used for "husband's father." Colloquially, kung⁽¹⁰⁹⁾ is often used.

⁵¹ Po⁽¹¹⁰⁾ may be used for "husband's mother." Ku chang,⁽¹¹¹⁾ an ancient usage, and ku kung⁽¹⁴⁾ may be used for "husband's parents." The cross-cousin marriage is indicated by the use of the term ku, which is used for (1) husband's mother, (2) husband's sister, (3) wife's mother, and (4) father's sister. The second use is apparently inconsistent, but it is really a form of politeness on the part of the wife in addressing her husband's sisters, whereby she speaks as if she were one generation lower than they. It is much the same as the custom in America of a man addressing his mother-in-law as "grandma." This also applies to the use of po and shu ("uncle") to the husband's brothers.

⁵² Hsiung kung⁽¹¹²⁾ is a colloquial term for this relationship.

⁵³ The older brother's wife may be called szu,⁽¹¹³⁾ and the younger brother's wife, ti.⁽¹¹⁴⁾ The wives of the brothers call one another szu⁽¹¹³⁾ or chu li.⁽¹¹⁵⁾ In colloquial usage mu mu, written⁽¹¹⁶⁾ or ⁽¹¹⁷⁾ or ⁽¹¹⁸⁾ is sometimes used.

⁵⁴ Shen⁽¹¹⁹⁾ may also be used for this term.

⁵⁵ Ku prefixed by ta⁽¹²⁰⁾ or hsiao⁽¹²¹⁾ designates the husband's younger or older sisters. Sometimes numbers are used for this purpose for both men and women, such as "third sister" or "fourth son." The terms nu kung⁽¹²²⁾ ("husband's older sister") and nü shu,⁽¹²³⁾ nu mei⁽¹²⁴⁾ or shu mei⁽¹²⁵⁾ ("husband's younger sister") are not commonly used, but are permissible. Ku niang⁽¹²⁶⁾ is used in certain sections for "unmarried woman."

⁵⁶ The terms in Table III are not common today, for the wife generally uses the same terms as her husband in referring to members of his clan. For this reason the table is not elaborated. The wife may also use the same terms as her children as a form of politeness.

2. Wai tseng tsu mu (mother's father's mother).
- B. Generation of the mother's father.
 3. Wai tsu fu (mother's father).⁵⁸
 4. Wai tsu mu (mother's mother).
 5. T'ang wai tsu fu (mother's father's brother).
 6. T'ang wai tsu mu (wife of 5).
 7. T'ang wai tsu yi mu (mother's father's sister).
 8. T'ang wai tsu yi fu (husband of 7).
- C. Generation of the mother.
 9. Chiu fu (mother's brother).
 10. Chiu mu (mother's brother's wife).
 11. Yi mu (mother's sister).
 12. Yi fu (mother's sister's husband).⁵⁹
 13. T'ang chiu fu (son of mother's father's brother).
 14. T'ang chiu mu (wife of 13).
 15. T'ang yi mu (daughter of mother's father's brother).⁶⁰
 16. T'ang yi fu (husband of 15).
- D. Generation of the speaker.
 17. Piao hsiung (mother's brother's son, older than the speaker).
 18. Piao sao (wife of 17).
 19. Piao ti (mother's brother's son, younger than the speaker).
 20. Piao ti fu (wife of 19).
 21. Piao tzu (mother's brother's daughter, older than the speaker).
 22. Piao tzu fu (husband of 21).
 23. Piao mei (mother's brother's daughter, younger than the speaker).
 24. Piao mei fu (husband of 23).⁶¹
 25. Yi hsiung (mother's sister's son, older than the speaker).⁶²

⁵⁷ This list of terms can be extended in accordance with the system used in the father's clan, for instance, by prefixing t'ang⁽¹²⁷⁾ to terms 3-16 in Table III to secure the terms for the nearest collateral line.

⁵⁸ Wai wang fu,⁽¹²⁸⁾ wai ta fu,⁽¹²⁹⁾ and wai weng,⁽¹³⁰⁾ may also be used for "mother's father." Wai wang mu⁽¹³¹⁾ is used for "mother's mother." Wai kung⁽¹³²⁾ and wai p'o⁽¹³³⁾ are colloquial terms for "mother's father" and "mother's mother" respectively.

⁵⁹ Yi fu⁽¹³⁴⁾ is also used for this relationship.

⁶⁰ Terms 13 and 15 have the word chiu, indicating the cross-cousin marriage, and not the words po and shu.

⁶¹ Terms 17-24 are the same as terms 85-92 in Table I (father's sister's children) a use which indicates the cross-cousin marriage.

⁶² Mother's sister's sons are also called wai hsiung ti⁽¹³⁵⁾ and yi tzu.⁽¹³⁶⁾ This use

26. Yi sao (wife of 25).
 27. Yi ti (mother's sister's son, younger than the speaker).
 28. Ti ti fu (wife of 27).
 29. Yi tzu (mother's sister's daughter, older than the speaker).
 30. Yi tzu fu (husband of 29).
 31. Yi mei (mother's sister's daughter, younger than the speaker).
 32. Yi mei fu (husband of 31).⁶³
 33. T'ang piao hsiung (son's son of mother's father's brother, older than the speaker).
 34. T'ang piao sao (wife of 33).
 35. T'ang piao ti (son's son's of mother's father's brother, younger than the speaker).
 36. T'ang piao ti fu (wife of 35).⁶⁴
 37. T'ang piao tzu (son's daughter of mother's father's brother, older than the speaker)
 38. T'ang piao tzu fu (husband of 37).
 39. T'ang piao mei (son's daughter of mother's father's brother, younger than the speaker).
 40. T'ang piao mei fu (husband of 39).
- E. Generation of the son
41. Piao chih (son of mother's brother's son).
 42. Piao chih fu (wife of 41).
 43. Piao chih nü (mother's brother's son's daughter).
 44. Piao chih hsü (husband of 43).
 45. Piao chih (son of mother's brother's daughter).
 46. Piao chih fu (wife of 45).
 47. Piao chih nü (mother's brother's daughter's daughter).
 48. Piao chih hsü (husband of 47).⁶⁵

does not suggest the sororate, and probably developed after the sororate fell into disuse. On the other hand, the term for "mother's sister's son" in the Erh ya, tsung mu k'un ti⁽¹³⁷⁾ may indicate the sororate. Under the sororate, the daughters of the mother's sister (tsung mu, "those who follow the mother") would be members of the speaker's clan, and therefore not eligible for marriage.

⁶³ Terms 29-32 are the same as terms 7-10 in Table II, the wife's sisters and their husbands. This use would indicate that the sororate had been dropped. On the other hand, the term in the Erh ya, tsung mu tzu mei⁽¹³⁸⁾ may indicate the sororate.

⁶⁴ Terms 33-36 are the same as terms 93-96 in Table I, which would indicate the cross-cousin marriage.

⁶⁵ Terms 41-48 are terms for the grandchildren of the mother's brother, and

49. Yi chih (mother's sister's son's son).
 50. Yi chih fu (wife of 49).
 51. Yi chih nü (mother's sister's son's daughter).
 52. Yi chih hsü (husband of 51).
 53. Yi chih (mother's sister's daughter's son).
 54. Yi chih fu (wife of 53).
 55. Yi chih nü (mother's sister's daughter's daughter).
 56. Yi chih hsü (husband of 55).⁶⁶
 57. T'ang piao chih (son's son of 13).
 58. T'ang piao chih fu (wife of 57).
 59. T'ang piao chih nü (son's daughter of 13).
 60. T'ang piao chih hsü (husband of 59).
 61. T'ang yi piao chih (daughter's son of 13).
 62. T'ang yi piao chih fu (wife of 61).
 63. T'ang yi piao chih nü (daughter's daughter of 13).
 64. T'ang yi piao chih hsü (husband of 63).
- F. Generation of the son's son
65. Piao chih sun (son's son's son of mother's brother).
 66. Piao chih sun nü (son's son's daughter of mother's brother).⁶⁷
 67. Yi chih sun (son's son's son of mother's sister).
 68. Yi chih sun nü (son's son's daughter of mother's sister).
 69. T'ang piao chih sun (son's son's son of 13).
 70. T'ang piao chih sun nü (son's son's daughter of 13).

AN ANALYSIS OF THE USE OF CHINESE RELATIONSHIP TERMS⁶⁵

I. *Independent Elements*⁶⁹

1. *Fu*⁽¹³⁹⁾

- a. A male adult. T.Y., sect.⁽¹⁾ p. 237.⁷⁰

therefore terms 41-44 are the same as terms 45-48. They are also the same as terms 117-120 in Table I, the grandchildren of the father's sister. This usage indicates the cross-cousin marriage.

⁶⁶ Terms 49-56 represent the grandchildren of the mother's sister, and therefore terms 49-52 are the same as terms 53-56. This usage does not indicate the sororate.

⁶⁷ Terms 65 and 66 are the same as terms 157 and 159 in Table I. This also indicates the cross-cousin marriage.

⁶⁸ The definition of these terms is not exhaustive, only those uses with some bearing upon relationship being given.

⁶⁹ The principle upon which rests the distinction between independent and dependent elements in the relationship terms is linguistic. The former are those used

- b. The supporter (of the family). Po hu t'ung, cited by C.H., sect.⁽⁹¹⁾ p. 22.
- c. Husband. Book of Changes, cited by T.Y., sect.⁽¹⁾ p. 237, and Lieh nü chuan,⁽¹⁴⁰⁾ cited by C.H., sect.⁽⁹¹⁾ p. 22.
- 2. *Ch'i*⁽¹⁴¹⁾
 - a. The woman who is equal (to the speaker). C.H., sect.⁽⁹¹⁾ p. 46.
 - b. Wife. T.Y., sect.⁽¹⁾ p. 260.
 - c. To give a daughter in marriage. When the word is used in this sense as a verb, it is pronounced in a different tone. *Ibid.*
- 3. *Fu*⁽¹⁴²⁾
 - a. The head of the family. The analysis of the word indicates a man holding a staff. C.H., sect.⁽²⁾ p. 42.
 - b. Father. The man who gave life (to the speaker). T.Y., sect.⁽⁹⁰⁾ p. 222.
 - c. A male member of the father's clan, of a higher generation than the speaker. When the word is used in this sense, a dependent element is added to distinguish the man from the actual father. Erh ya, cited by C.H., sect.⁽²⁾ p. 42.
 - d. A male member of the mother's clan, of a higher generation than the speaker, when used with dependent elements which indicate the relationship and clan. *Ibid.*
 - e. A male member of the wife's clan, of a higher generation than the speaker, when used with dependent elements which indicate the clan; for instance, yo fu⁽¹⁴³⁾ "father-in-law." T.Y., sect.⁽⁹¹⁾ p. 139.⁷¹
 - f. A term of respect for an older man. In this sense the word may be used independently, or in such an expression as fu lao⁽¹⁴⁴⁾ "old father." T.Y., sect.⁽⁹⁰⁾ p. 222 and C.H., sect.⁽²⁾ p. 42.

as relationship terms without any other elements, while the dependent elements are never so used alone. A number of terms are used in both ways. These are listed as independent elements, but the other uses are noted. This linguistic classification corresponds very well with the biological classification.

⁷⁰ The abbreviations used are: T.Y. for Tsu yüan,⁽¹⁹⁹⁾ a source book of words and phrases; C.H. for Chung hua ta tsu tien,⁽²⁰⁰⁾ a dictionary. The collection of terms was made chiefly from these two sources.

⁷¹ Although some of these terms appear to be used for classes of persons, the system is descriptive rather than classificatory. Usually dependent elements are added to indicate the exact relationship, though a few words, like "father," "mother," "brother," and "sister" may be used for almost anyone as a polite form of address, much as in English.

4. *Mu*⁽¹⁴⁵⁾

- a. A woman who has borne a child and nourished it as a herdsman nourishes his animals. The two dots in the character are said to represent the nipples. Hsüeh wen, cited in C.H., sect.⁽²⁾ p. 39.
- b. Mother; the woman who gave birth (to the speaker). T.Y., sect.⁽²⁾ p. 213.
- c. An origin; that which produces something. For instance, the vowels of the English alphabet are called mu yin;⁽¹⁴⁶⁾ invested capital is called mu tsai,⁽¹⁴⁷⁾ i.e. the "mother" of the interest. *Ibid.*
- d. All married women of the clans of the father, mother, and wife of a higher generation than the speaker, but in combination with other elements which indicate the exact relationship and clan, in the same way that fu ("father") is used. Erh ya, cited in C.H., sect.⁽²⁾ p. 39; T.Y., sect.⁽²⁾ p. 139.
- e. A title of respect for an elderly woman, T.Y., sect.⁽²⁾ p. 213; C.H., sect.⁽²⁾ p. 39.

5. *Tzu*⁽⁸⁷⁾

- a. A descendant; the one who succeeds the father. C.H., sect.⁽⁹¹⁾ p. 1.
- b. Offspring or child. Ancient usage applied it to both sons and daughters, but modern usage confines it to sons only. T.Y., sect.⁽⁹¹⁾ p. 1.
- c. A term of respect for a man. In this sense it is usually translated "master"; for instance Lao Tzu, "the old master." In this sense the term is considered the equivalent of the fourth grade of nobility during the ancient period. *Ibid.*
- d. A term used by husband and wife in referring to each other; nei tzu⁽⁴⁹⁾ ("my wife"), and wai tzu⁽¹⁰³⁾ ("my husband"). *Ibid.*
- e. An increment, or a part; in this sense the opposite of the word mu (in the sense of "origin"). For instance, fen mu⁽¹⁴⁸⁾ is used for the denominator, and fen tzu⁽¹⁴⁹⁾ for the numerator of a fraction. The interest on invested capital (mu tsai) is called tzu chin.⁽¹⁵⁰⁾ *Ibid.*

6. *Nu*⁽¹⁵¹⁾

- a. Female, T.Y., sect.⁽²⁾ p. 252.
- b. An unmarried woman or girl, C.H., sect.⁽⁹¹⁾ p. 38.
- c. Daughter, T.Y., sect.⁽⁹¹⁾ p. 1.

7. *Hsiung*⁽¹⁵²⁾

- a. The older one. Hsüeh wen, cited by C.H., sect.⁽⁸⁷⁾ p. 103.
- b. Older brother. Erh ya, cited by C.H., sect.⁽⁵⁷⁾ p. 103.
- c. A term mutually used by men of the same generation or rank. A friend may be called hsiung. T.Y., sect.⁽⁸⁷⁾ p. 247.
- d. A term for both men and women older than the speaker. For instance,

an older sister may be called nü hsiung⁽⁶³⁾ (an ancient usage, not common at present). C.H., sect.⁽⁸⁷⁾ p. 103.⁷²

8. *Ti*⁽¹⁵³⁾
 - a. One after the other, in order; consecutive, C.H., sect.⁽¹⁾ p. 110.
 - b. Younger brother. T.Y., sect.⁽⁹¹⁾ p. 228.
 - c. Young man. The speaker would call his friend hsiung, but refer to himself as ti. A teacher may call his students ti. An older man may refer to a younger as ti. The term is a polite way of referring to oneself. *Ibid.*
 - d. A term for both men and women younger than the speaker. For instance, nü ti ("younger sister"). T.Y., sect.⁽¹⁾ p. 252.
9. *Tzu*⁽¹⁵⁴⁾
 - a. A woman; a feminine hsiung. Originally written⁽¹⁵⁵⁾ Hsüeh wen, cited by C.H., sect.⁽⁹¹⁾ p. 47.
 - b. Older sister, Erh ya, cited by T.Y., sect.,⁽¹⁾ p. 260.⁷³
 - c. Mother. In this sense the word is repeated, tzu tzu. An ancient usage. *Ibid.*
10. *Mei*⁽¹⁵⁶⁾
 - a. A feminine ti. Hsüeh wen, cited by C.H., sect.⁽⁹¹⁾ p. 46.
 - b. Younger sister, Erh ya, cited by T.Y., sect.⁽¹⁾ p. 260.
11. *Po*⁽¹⁰⁸⁾
 - a. Older. Hsüeh wen, cited by C.H., sect.⁽⁸⁷⁾ p. 40.
 - b. Older brother; used in the sense of hsiung. The Odes give the terms for four consecutive brothers as po,⁽¹⁰⁸⁾ chung,⁽¹⁵⁷⁾ shu,⁽¹⁵⁸⁾ chi.⁽¹⁵⁹⁾ T.Y., sect.⁽⁸⁷⁾ p. 175.
 - c. Father's older brother. Originally the term was po fu⁽¹⁶⁰⁾ "older father." Since the Chin and Wei periods (fourth century A.D.) po has been used alone. *Ibid.*
 - d. A wife considers her husband as po. The Odes, cited by C.H., sect.⁽⁸⁷⁾ p. 40.
 - e. A woman calls her husband's older brother po.⁷⁴ *Ibid.*

⁷² Hsiung ti is now the equivalent of "brother," either older or younger. Hsiung as "older brother" has now been superseded by ko,⁽⁵⁶⁾ which is usually reduplicated as ko ko. Such reduplication is common in Mandarin, being found with other relationship terms, such as mei mei, younger sister, T.Y. sect.⁽¹⁾ p. 64.

⁷³ In modern usage, tsu has been largely superseded by chci⁽⁶²⁾ or chei chei.

⁷⁴ Po is used for "husband" and "husband's older brother" by a woman, while shu is used for "husband's younger brother." This usage indicates the junior levirate. When po and shu are used of the brothers of the father, the word "father" is, or was formerly, added.

- f. The third grade of nobility during the ancient period. *Ibid.*
12. *Shu*⁽¹⁵⁸⁾
- Younger. T.Y., sect.⁽⁸⁷⁾ p. 414.
 - The third of four brothers. *Ibid.*
 - The father's younger brother. In this sense shu fu is also used. Erh ya, cited by C.H., sect.⁽⁸⁷⁾ p. 198.
 - A woman calls her husband's younger brother shu. *Ibid.*
13. *Tsu*⁽¹⁶¹⁾
- The beginning or origin. C.H., sect.,⁽¹⁶²⁾ p. 176.
 - Ancestor. *Ibid.*
 - The father's father. T.Y., sect.⁽¹⁶²⁾ p. 186.
 - Tsu is combined with dependent elements to indicate men of the clan above the father's generation. For instance, kao tsu⁽¹⁶³⁾ "father's father's father's father." T.Y., sect.⁽¹⁶⁴⁾ p. 32.
14. *Sun*^(165/75)
- Son's son. T.Y., sect.⁽⁹¹⁾ p. 17.
 - Male descendants; the term is used for males of the clan of the grandson's or lower generations. In this sense the term is combined with dependent elements to indicate the exact relationship. C.H., sect.⁽⁹¹⁾ p. 6.
 - The term is used, with dependent elements which indicate the exact relationship, for males of the mother's and wife's clans of lower generations than that of the son. *Ibid.*
 - Rebirth. T.Y., sect.⁽⁹¹⁾ p. 17.
15. *Ku*^(166/76)
- A woman calls her husband's mother ku. Hsueh wen, cited by C.H., sect.⁽⁹¹⁾ p. 48.
 - The father's sisters. *Ibid.* The modern colloquial usage is ku mu.⁽¹⁶⁷⁾ T.Y., sect.⁽¹⁾ p. 261.
 - The term is used in the expression wai ku for the wife's mother. T.Y., sect.⁽¹⁾ p. 261.
 - The term is used with a dependent element by a woman for her husband's younger sisters. *Ibid.*
 - Woman; in modern colloquial usage, an unmarried woman. *Ibid.*

⁷⁵ The word sun can be analyzed into tzu⁽⁵⁷⁾ ("son") and hsi⁽²⁰²⁾ ("continuation"). Hsueh wen, cited by C.H., sect.⁽⁹¹⁾ p. 6.

⁷⁶ The use of ku clearly indicates the cross-cousin marriage. It is hard to say why ku should also be used for "husband's younger sister," but it is probably a form of politeness. In this sense the addition of a dependent element indicates that the usage is not primary.

16. *Sao*^(168, 77)
 - a. Older brother's wife. T.Y., sect.⁽¹⁾ p. 276.
 - b. The term may be used for the wife of anyone whom the speaker would call hsiung,⁽¹⁵²⁾ "older brother." *Ibid.*
17. *Fu*^(47, 78)
 - a. The son's wife. Erh ya, cited by T.Y., sect.⁽¹⁾ p. 273.
 - b. A woman. *Ibid.*
 - c. A man may call his wife fu. The expression fu fu⁽¹⁶⁹⁾ means "husband and wife." T.Y., sect.⁽¹⁾ pp. 237, 273.
18. *Chih*⁽¹⁷⁰⁾
 - a. A term used by a woman for the daughter of her brother.⁷⁹ Hsueh wen, cited by C.H., sect.⁽⁹¹⁾ p. 53.
 - b. Either the son or daughter of a woman's brother. *Ibid.*
 - c. Since the Chin period (A.D. 265-419), the term has been used for the children of a brother or sister. T.Y., sect.⁽¹⁾ p. 266. In modern colloquial usage, the nephew is called chih tzu⁽¹⁷¹⁾ and the niece, chih nu.⁽¹⁷²⁾
 - d. In modern usage, the speaker refers to himself as chih in addressing an older friend or relative, whom he would call po or shu. T.Y., sect.⁽¹⁾ p. 286.
19. *Hsü*⁽¹⁰⁶⁾
 - a. Daughter's husband. T.Y., sect.⁽¹⁾ p. 180.
 - b. A woman calls her husband hsü. *Ibid.*
20. *Sheng*^(173, 80)
 - a. Sister's son. C.H., sect.⁽¹⁶²⁾ p. 170.

⁷⁷ Sao may be analyzed into words meaning "woman" and "older." Its use for "older brother's wife" can hardly be said to indicate the junior levirate, but is consistent with it, because in the event of the woman's eventually marrying the older brother, she would no longer be the chief wife, and would be obliged to treat the brother's chief wife with respect. C.H., sect.⁽⁹¹⁾ pp. 66, 74.

⁷⁸ Fu⁽⁴⁷⁾ may be analyzed into words for "woman" and "broom." The word fu indicates the woman's function of obedience and of serving. Hsueh wen, cited by C.H., sect.⁽⁹¹⁾ p. 63.

⁷⁹ The use of chih indicates cross-cousin marriage, since the same term was not used for the child of the woman's sister. But since the fourth century A.D. this use has been dropped, which seems to indicate the gradual abandonment of cross-cousin marriage.

⁸⁰ Sheng may be analyzed into words meaning "birth" or "to be born," and "male." Its use indicates cross-cousin marriage. Different terms, sheng, and chih, are used for the son of a man's sister and the son of a woman's brother, because the former term would be used by a man, and the latter by a woman.

- b. Daughter's husband; synonymous with hsü.⁸¹ *Ibid.*
 - c. According to the Erh ya, sheng was used for the sons of the father's sisters and the mother's brothers, for the wife's brothers and the husband's sisters. C.H., sect.⁽¹⁶²⁾ p. 170; T.Y., sect.⁽¹⁶²⁾ p. 56.
 - d. The modern usage is to apply the term to the sister's son, generally in the phrase wai sheng.⁽¹⁷⁴⁾ *Ibid.*
21. *Chiu*^(175:82)
- a. Mother's brother. T.Y., sect.⁽¹⁷⁶⁾ p. 150.
 - b. Husband's father. *Ibid.*
 - c. The term is used in the expression wai chiu⁽⁹²⁾ for the wife's father. *Ibid.*
 - d. Wife's brothers. Hsin T'ang shu, cited in *ibid.*
 - e. A relative with a different surname from the speaker (i.e. of a different clan). This use is found in the T'ung hsiung ting sheng.⁽¹⁷⁷⁾ According to the Po hu t'ung, chiu is a term of respect for one who is like the father, yet not the actual father. In the Erh ya, the mother's younger brother is called chiu. In the Book of Rites the⁽¹⁷⁶⁾ husband's father is called chiu. C.H., sect.⁽¹⁷⁶⁾ p. 520.
22. *Yi*⁽¹⁷⁸⁾
- a. Wife's sister (either older or younger). Hsüeh wen, cited by C.H., sect.⁽⁹¹⁾ p. 53; Erh ya and Odes, cited by T.Y., sect.⁽¹⁾ p. 266.
 - b. Mother's sister (either older or younger). C.H., sect.⁽⁹¹⁾ p. 53; T.Y., sect.⁽¹⁾ p. 266.
 - c. Concubine. This meaning is due to the ancient use of the sororate, the wife's sisters becoming the concubines of the husband. *Ibid.*

II. The Principal Dependent Elements

1. *Kao*⁽¹⁷⁹⁾

The word is used independently as an adjective, and translated "high," "revered," "old," etc. It may sometimes be translated "ancestor." It appears as a relationship term in the expression kao tsu⁽¹⁶³⁾ ("father's father's father's father"). This expression is also used as the temple name of several emperors. T.Y., sect.⁽¹⁶⁴⁾ p. 31; C.H., sect.⁽¹³⁰⁾ p. 164.

⁸¹ The use of the same term for sister's son and daughter's husband is a clear indication of cross-cousin marriage.

⁸² The uses of chiu also indicate cross-cousin marriage. In a strict system based on it, the marriage with the child of the mother's sister would be forbidden. This is unnecessary for the Chinese, since the mother's sister's child would have the same surname as the speaker, which would make marriage impossible.

2. *Tseng*⁽¹⁸¹⁾

Used independently, the word means "added" or "contiguous." As a relationship term it appears in the expressions *tseng tsu*⁽¹⁸²⁾ ("father's father's father"), and *tseng sun*⁽¹⁸³⁾ ("son's son's son"). In the Odes the term is used for any male of a generation lower than the son's son (T.Y., sect.⁽²⁾ pp. 57, 58). The terms *tseng tsu* and *tseng sun* occur in the Erh ya.

3. *Hsuan*⁽¹⁸⁴⁾

Used independently, the word means "far" and "distant" (C.H., sect.⁽¹⁶²⁾ p. 73). As a relationship term it appears in *hsuan sun* ("son's son's son"). T.Y., sect.⁽¹⁶²⁾ p. 2.

4. *Pao*⁽¹⁸⁵⁾

Used independently, the word means the placenta, or connection in the womb between the mother and the foetus. As a relationship term it is used with *hsiung* ("older brother") and *ti* ("younger brother") to indicate siblings, and in the expression *t'ung pao* ("same placenta" or "sibling"). T.Y., sect.⁽¹⁷⁶⁾ p. 154.

5. *T'ang*⁽¹²⁷⁾

Literally "a hall." As a relationship term it indicates that the persons referred to have the same father's father. In modern usage a speaker will refer to the mother of the person he is addressing as *ling t'ang*.⁽¹⁸⁶⁾ Formerly the expression *t'ung t'ang*⁽¹⁸⁷⁾ ("the same house") was used, but *t'ung* has been dropped since the T'ang period (seventh to tenth centuries A.D.). The term is prefixed to *hsiung*, *ti* ("brothers"), *po* and *shu* ("paternal uncles"). T.Y., sect.⁽¹⁾ pp. 158, 160.

6. *Tsung*⁽¹⁸⁸⁾

Used independently the word means "to follow" or "to attend." As a relationship term it is used for the collateral line of the brothers of the father's father. It is used as a synonym for *t'ang* with *hsiung*, *ti*, *po* and *shu*. T.Y., sect.⁽¹⁾ p. 160 and sect.⁽⁹¹⁾ p. 253.

7. *Tsai*⁽¹⁸⁹⁾

Used independently the word means "again" or "repetition." As a relationship term it is used with *tsung* for the collateral line of the brothers of the father's father. T.Y., sect.⁽⁵⁷⁾ p. 298 and sect.⁽⁹¹⁾ p. 254.

8. *Tsu*⁽¹⁹⁰⁾

As a relationship term, *tsu* indicates that the person referred to is in the collateral line of the brother of the father's father's father. It also designates members of the clan too distant to have mourning obligations to the speaker. In the Erh ya the term appears in such expressions as *tsu tsu wang fu*⁽¹⁹¹⁾ and in the Yi li it is used in the expression *tsu hsiung ti*.⁽¹⁹²⁾ The term

is a synonym for sang tsung⁽¹⁹³⁾ ("thrice venerated"). It is also used as a group term. T.Y., sect.⁽¹⁹⁴⁾ pp. 195-96.⁸³

9. *Piao*⁽¹⁹⁵⁾

When used independently, the term usually means "outside." As a relationship term it indicates that the person is a descendant of a woman of the father's clan who has married into another clan, or of a brother of the mother. T.Y., sect.⁽¹⁹⁶⁾ pp. 162-63.

10. *Yi*⁽¹⁷⁸⁾

Yi has already been listed, as an independent term. It is also used as a dependent term to indicate that the person referred to is related to the speaker by affinity, either through the mother's sister or the wife's sister. T.Y., sect.⁽¹⁾ p. 266.

11. *Nei*⁽²⁰¹⁾

Used independently, the term means "inside" or "inner." A man may refer to his wife as nei tzu,⁽⁴⁹⁾ nei jen⁽⁴⁸⁾ or nei tsu.⁽⁵⁰⁾ (T.Y., sect.⁽⁵⁷⁾ pp. 259-260).⁸⁴ As a relationship term it indicates that the person referred to is a member of the wife's clan, of a generation below that of the wife's mother. The wife's younger sister may be called nei mei⁽¹⁰²⁾ and her brothers nei hsiung ti.⁽¹⁹⁷⁾ ⁸⁵ *Ibid.* pp. 260-262.

12. *Wai*⁽⁷¹⁾,⁸⁶

Used independently, the word means "outside" or "foreign." The wife may call her husband wai tzu.⁽¹⁰³⁾ (T.Y., sect.⁽¹⁾ p. 186). As a relationship term it usually indicates that the person referred to is related to the speaker by affinity through a woman. It is used in the expression wai ch'in⁽¹⁹⁸⁾ ("relatives by affinity through a woman"). *Ibid.* p. 188.

TERMS NOT APPEARING IN THE TABLES

1. *Ti*⁽²⁰⁵⁾

The word means "legitimate," and as a relationship term denotes the wife as opposed to the concubines. In the Yi li, the wife's oldest son is called ti tzu.⁽⁷³⁾ The son of a concubine calls the wife ti mu⁽²⁰⁶⁾ ("legitimate

⁸³ The head of a clan is called tsu chang.⁽²⁰³⁾

⁸⁴ According to a commentary on the Book of Rites, nei jen was used for both the wife and the concubines. In ancient usage, nei tzu was used for "wife," but in modern usage the expression designates only the wife of the speaker. T.Y., sect.⁽⁵⁷⁾ p. 259.

⁸⁵ According to a commentary on the Yi li, nei hsiung ti was used for the sons of chiu. According to the Yen tseng ching chia miao pei⁽²⁰⁴⁾ ("Inscription on the tablet in the Yen ancestral temple"), the term denoted the wife's brothers.

⁸⁶ The Tsu yuan (sect.⁽¹⁾ pp. 187-89) lists eleven relationship terms using wai.

mother"). The line of descendants through the wife is called ti tzu.⁽²⁰⁷⁾ T.Y., sect.⁽¹⁾ p. 277.

2. *Shu*⁽²⁰⁸⁾

The word means "common," and as a relationship term means son of a "concubine." In ancient usage, the speaker called his father's concubine shu mu⁽²⁰⁹⁾ when she had had children, but in modern usage this distinction is not made, and the expression is a general term for "father's concubine." According to the Po hu t'ung, the oldest son of a concubine was called shu chang.⁽²¹⁰⁾ T. Y. sect.⁽⁹¹⁾ p. 204

3. *Hou*⁽²¹¹⁾

The word means "back," "rear," or "later." In the Book of Changes the expression hou fu⁽²¹²⁾ is used for "descendants" or "successors." In modern colloquial usage, hou means "second husband." Hou ch'i⁽²¹³⁾ means "second wife," and hou sheng⁽²¹⁴⁾ means "young people." The son of the first wife calls the second wife hou mu.⁽²¹⁵⁾ T.Y., sect.⁽⁹¹⁾ p. 247.

4. *Chi*⁽²²⁷⁾

In the "Doctrine of the Mean" and "Mencius," the word means "succeeding" or "continuous." When a woman marries a second time, her son by the first husband calls the second husband chi fu.⁽²¹⁶⁾ Chi mu⁽²¹⁷⁾ is the name used by the speaker for a woman, not the wife of his father, who has nursed and raised him when the actual mother has died or been divorced. It approximates the English "foster-mother." A wife calls her husband's chi mu, chi ku⁽²¹⁸⁾ ("foster-aunt"). Chi shih⁽²¹⁹⁾ and chi p'ei⁽²²⁰⁾ are synonyms for "second wife." The brothers of the father's second wife are called chi chiu.⁽²²¹⁾ The legal term for adoption is chi ch'eng.⁽²²²⁾ T.Y., sect.⁽¹⁷⁶⁾ pp. 97, 98.

5. *Ch'eng*⁽²²³⁾

The word means "to offer," "to accept," "to succeed." It is used with chi as "adoption." An adopted son is called ch'eng t'iao tzu.⁽²²⁴⁾ However, the adopted son calls his adopted father fu. Sometimes chi fu is used for "father by adoption," but incorrectly. T.Y., sect.⁽¹⁹⁴⁾ p. 87.

6. *Tsu*⁽²²⁵⁾

The word means "to succeed," "to continue." The oldest son is called tsu tzu,⁽²²⁶⁾ which De Groot aptly translates "continuator." An adopted son, usually the son of a brother, may be called tsu, since a son would be adopted in order to secure a "continuator." T.Y., sect.⁽¹⁾ p. 94.

7. *Ch'eh*⁽²²⁸⁾

The word means "small wife" or "concubine." It is sometimes used by a woman as a humble way of referring to herself. Its original use seems to

have been for the sisters of the wife, who became the concubines of her husband by the sororate. (T.Y., sect.⁽¹⁾ p. 260). A concubine calls the husband *chu fu*⁽²²⁹⁾ and the wife *chu mu*.⁽²³⁰⁾ *Chu* means "master," or "the head of the family." T.Y., sect.⁽¹⁸⁷⁾ pp. 81, 82.

8. *Niang*⁽³⁴⁾

The word means "unmarried woman." *Ku niang* is used for "concubine." *Yi niang*⁽²³¹⁾ and *hsiao fu*⁽²³²⁾ ("small wife") are also used colloquially for "concubine." *Niang tzu*⁽²³³⁾ is colloquially used for wife. *Niang niang* originally designated the mother of the emperor, and later the empress. It is commonly used for female divinities, for instance the *Tsung tzu niang niang*⁽²³⁴⁾ when these divinities have husbands. The term would not be applied to such a god as *Kuan yin*, who is not married. T.Y., sect.⁽¹⁾ p. 270.

9. *Kan*⁽²³⁵⁾

This word appears in the Book of Changes as one of the two principles of the universe. It is then pronounced *ch'ien* (the male principle) and is opposed to *k'un*⁽²³⁶⁾ (the female principle). *Ch'ien k'un* is accordingly an expression for "marriage," and the terms are used separately for the clans of husband and wife. When the word is pronounced *kan*, it means "dry." Colloquially *kan yei*⁽²³⁷⁾ and *kan niang*⁽²³⁸⁾ are used for "father" and "mother" in a complimentary sense, for instance, a protégé might use it for his patron. T.Y., sect.⁽⁸⁷⁾ p. 104

10. *P'ing*⁽²³⁹⁾

The word means "elegant," "graceful." The term is used for "engagement." *P'ing hui*⁽²⁴⁰⁾ may be used for either one of the engaged couple. Colloquially, *wei hun fu*⁽²⁴¹⁾ is used for the man, and *wei hun ch'i*⁽²⁴²⁾ for the woman. T.Y., sect.⁽¹⁾ p. 267.

11. *yi*⁽²⁴³⁾

The word often appears in relationship terms, especially in the Shanghai district, such as a *weng*⁽²⁴⁴⁾ ("father's father"), a *tei*⁽²⁴⁵⁾ or a *yei*⁽²⁴⁶⁾ (colloquial for "father"), a *mu*,⁽²⁴⁷⁾ a *chia*,⁽²⁴⁸⁾ and a *ku*⁽²⁴⁹⁾ ("mother"), a *hsiung*⁽²⁵⁰⁾ ("older brother"), a *kung*⁽²⁵¹⁾ ("husband's father"), etc. The most significant of these expressions is a *yi*.⁽²⁵²⁾ This is used for "mother's sister," "wife's sister," and "father's concubine." The *Tsu yüan* (sect.⁽¹⁾ p. 102) gives the following explanation.

Originally sisters married one husband, hence *yi* was used. This custom has disappeared. The father's concubine, though no longer the mother's sister, has practically the same status as the latter, and the term is still used.

RELATIONSHIP TERMS ACCORDING TO THE ERH YA⁸⁷I. *Tsung tsu*,⁽²⁵³⁾ The Clan of the Father.

1. The father (fu⁽¹⁴²⁾) is called k'ao.⁽²¹⁾ The mother (mu⁽¹⁴⁵⁾) is called pi.⁽²²⁾

Commentary.⁸⁸ According to the Book of Rites, the terms fu, mu and ch'i⁽¹⁴¹⁾ (wife) are used for persons living. When they are dead, the terms k'ao, pi and p'in⁽²³⁴⁾ are substituted respectively.

In the History, Kung-yang's commentary on the Spring and Autumn Annals, Ch'ang Cheh,⁸⁹ and the Odes, these terms do not indicate the difference between living and dead.⁹⁰

2. The father's father is called wang fu.⁽²³⁾ The father's mother is called wang mu.⁽²⁶²⁾

Commentary. The word wang⁹¹⁽²⁶³⁾ is used because they are honored as rulers.

3. The father's father's father is called tseng tsu wang fu.^(3 92) The father's father's mother is called tseng tsu wang mu.⁽⁶⁾

Commentary. The word tseng⁽¹⁸¹⁾ means "added."

4. The father's father's father's father is called kao tsu wang fu.⁽²⁶⁴⁾ The father's father's father's mother is called kao tsu wang mu.⁽²⁶⁵⁾

Commentary. Kao⁽¹⁷⁹⁾ means "highest."

5. The brothers (both older and younger) of the father's father are called tsung tsu tsu fu.⁽²⁶⁶⁾ Their wives are called tsung tsu tsu mu.⁽²⁶⁷⁾

⁸⁷ "The Erh ya,⁽²⁵⁵⁾ 'Literary Expositor,' is a dictionary of terms used in the classical and other writings of the same period, and is of great importance in elucidating the meaning of such words." Wylie, Notes on Chinese Literature, p. 9.

The Erh ya is attributed to Tzu-hsia, a personal disciple of Confucius. It certainly belongs to the ancient period. The edition used is in the *Ssu pu pei yao*,⁽²⁷⁶⁾ published by the Chung hua shu chu.⁽²⁷⁷⁾ It is not dated. The section translated is on "Relationship terms," vol. III, chap. 4, pp. 13 l. f. It is assumed that the speaker is a man.

⁸⁸ The commentary is by Kuo P'o⁽²⁵⁸⁾ of the Chin period (A.D. 265-420). The text and commentary were edited by Chin P'an⁽²⁵⁹⁾ of the Ming period (A.D. 1368-1644).

⁸⁹ The Ch'ang cheh p'ien⁽²⁶⁰⁾ is a book of uncertain date attributed to Ch'ang Cheh,⁽²⁶¹⁾ a minister of a legendary emperor.

⁹⁰ According to the *Tsu yuan* (sect.⁽¹⁷⁶⁾ p. 131), k'ao means "the old one."

⁹¹ Wang was originally used as the title of the Chou rulers. During the latter part of the Chou period it was usurped by the feudal lords. Under the Han, the word was applied to the highest rank of the nobility.

⁹² The expression tseng tsu wang fu means "added to the grandfather." In modern usage, tsu⁽¹⁶¹⁾ alone means grandfather or ancestor.

Commentary. Tsung tsu tsu is an expression meaning "the distinction originated in the generation of the grandfather."

6. The older brothers of the father are called shih fu.⁽¹³⁶⁾ The younger brothers of the father are called shu fu.⁽²⁶⁸⁾

Commentary. Shih indicates the direct continuator of the line, shu means younger.

7. Older brothers are called hsiung.⁽¹⁵²⁾ Younger brothers are called ti.⁽¹⁵³⁾ Older sisters are called tzu.⁽¹⁵⁴⁾ Younger sisters are called mei.⁽¹⁵⁶⁾ The sisters of the father (both older and younger) are called ku.⁽¹⁶⁶⁾ The sons of the father's father's brothers are called tsung tsu fu.⁽⁴⁶⁾ The grandsons of the brothers of the father's father's father are called tsu fu.⁽²⁶⁹⁾ The sons of tsu fu call each other tsu k'un ti.⁽²⁷⁰⁾ The sons of tsu k'un ti call each other ch'in t'ung hsin.⁽²⁷¹⁻⁹³⁾

Commentary. Ch'in t'ung hsin means "men of the same surname." They have no mourning obligations toward each other.

8. The sons of brothers call each other tsung fu k'un ti.⁽²⁷²⁾

Commentary. Tsung fu means that the distinction arose with the fathers. From the second ancestor they have the same line.

9. The son's son is called sun.⁽¹⁶⁵⁾

Commentary. Sun means "the one who follows" or "the descendant."

10. The son's son's son is called tseng sun.⁽¹⁸³⁾

Commentary. Tseng means "added" (i.e. another generation has been added).

11. The son's son's son's son is called hsüan sun.⁽²⁷³⁾

Commentary. Hsüan indicates that the relationship is distant.

12. The son of the hsüan sun is called lai sun.⁽²⁷⁴⁾

Commentary. Lai signifies that the relationship is distant.

13. The son of the lai sun is called k'un sun.⁽²⁷⁵⁻⁹⁴⁾

Commentary. K'un means descendant.

14. The son of the k'un sun is called jen sun.⁽²⁷⁶⁾

Commentary. Jen means "added" or "still."

15. The son of the jen sun is called yun sun.⁽²⁷⁷⁾

Commentary. Yun signifies that the relationship is as light and distant as a cloud.

16. The sisters of the wang fu (father's father) are called wang ku.⁽²⁷⁵⁾

⁹³ Ch'in may be translated "relative," tsu, "clan," and t'ung hsin, "the same surname."

⁹⁴ K'un is used in sentences 6-8 in the expression k'un ti, in the sense of older brother. In sentence 13 the word means "descendant."

(great aunt). The sisters of the tseng tsu wang fu (father's father's father) are called tseng tsu wang ku.⁽²⁷⁹⁾ The sisters of the kao tsu wang fu (father's father's father) are called kao tsu wang ku.⁽²⁸⁰⁾ The daughters of the brothers of the father's father are called tsung tsu ku.⁽²⁸¹⁾ The granddaughters of the brothers of the father's father's father are called tsu tsu ku.⁽²⁸²⁾ The mothers of the sons of the brothers of the father's father (wife of the grandfather's brother) are called tsung tsu wang mu.⁽²⁸³⁾ The mothers of the second cousins of the father (wives of the son of the great-grandfather's brothers) are called tsu tsu wang mu.⁽²⁸⁴⁾ The wives of the father's older brothers are called shih mu.⁽³⁷⁾ The wives of the father's younger brothers are called shu mu.^(285, 95) The wives of the sons of the brothers of the father's father (first cousins of the father) are called tsung tsu mu.⁽²⁸⁶⁾ The wives of the grandsons of the father's father's father (second cousins of the father) are called tsu tsu mu.⁽²⁸⁷⁾ The brothers of the father's father's father (grandfather's uncle) are called tsu tseng wang fu,⁽²⁸⁸⁾ and their wives are called tsu tseng wang mu.⁽²⁸⁹⁾ The concubines of the father are called su mu.⁽²⁹⁰⁾ Tsu is the equivalent of wang fu, "grandfather." K'un has the meaning "older brother."

Commentary. At the present time (i.e. the fourth century A.D.) the people of Chiang Tung⁽²⁹⁰⁾ ("east of the river") use the word k'un.^(291, 96)

II. *Mu tang*,⁽²⁹²⁾ The Clan of the Mother.

1. The father (k'ao) of the mother is called wai wang fu.⁽¹²⁸⁾ The mother (pi) of the mother is called wai wang mu.⁽¹³¹⁾ The mother's father's father is called wai tseng wang fu⁽²⁹³⁾ and his wife, wai tseng wang mu.⁽²⁹⁴⁾

Commentary. Wai ("external" or "foreign") is used because these persons have a different surname (from the speaker).

2. The k'un ti (older and younger brothers) of the mother are called chiu.⁽¹⁷⁵⁾ The sons of the brothers of the mother's father (first cousins of the mother) are called tsung chiu.⁽²⁹⁵⁾ The sisters of the mother are called tsung mu.⁽²⁹⁶⁾ The sons of the sisters of the mother are called tsung mu k'un ti.^(137, 97) The daughters of the sisters of the mother are called tsung mu tzu mei.^(135, 95)

⁹⁵ It may have been considered proper for a man to marry the wife of his younger brother after the latter's decease, but not the wife of the elder brother.

⁹⁶ The commentary indicates that the people of the coastal region south of the mouth of the Yangtse, who were racially and ethnologically different from the Chinese proper of the valley of the Huang Ho, did not formerly use the canonical relationship terms, but were doing so by the fourth century of our era.

⁹⁷ This term is no longer used.

⁹⁸ The sons of the mother's brothers are not mentioned.

III. *Ch'i tang*,⁽²⁹⁷⁾ The Clan of the Wife.

1. The father of the wife is called wai chiu.⁽⁹²⁾ The mother of the wife is called wai ku.^(96:99)

Commentary. These who call the speaker chiu,⁽¹⁷⁶⁾ the speaker calls sheng.⁽¹⁷³⁾ Therefore, it is proper to refer to the son-in-law (hsu⁽¹⁰⁶⁾) as sheng. Mencius said, "Shun married the two daughters of Yao, and the term sheng was used for him (in the History)."

2. The sons of the sisters of the father, the sons of the brothers of the mother, the brothers of the wife, and the husbands of sisters (of the speaker) are called sheng.^{(173) 100}

Commentary. These four classes are equal, and can call each other sheng. Sheng⁽¹⁷³⁾ is the equivalent of sheng.^{(298) 101}

3. The sisters of the wife, after they are married, are called yi.^{(178) 102}

Commentary. The Odes refer to "the yi of the marquis of Hsin."

4. A woman calls the husband of her sister, ssu.⁽²⁹⁹⁾

Commentary. The Odes refer to Duke T'an as a ssu.

5. A man calls the sons of his sisters ch'u.^{(300) 103}

Commentary. The term is used in this sense in the Kung-yang chuan.

6. A woman calls the sons of her brothers tsu.^{(170) 104}

⁹⁹ The wife's father has the same term (chiu) as the brothers of the mother, with the modifier wai ("external") added. The wife's mother has the same title as the sisters of the father (ku), with wai added. This terminology indicates cross-cousin marriage.

¹⁰⁰ This terminology clearly indicates cross-cousin marriage in ancient China. The brothers of the wife, in the case of such a marriage, would be either the sons of the father's sister or of the mother's brother. The husbands of the speaker's sisters are grouped with them, as all were brothers-in-law.

¹⁰¹ This terminology seems to have fallen into disuse. It is difficult to determine to what extent the cross-cousin marriage is practiced in China at present. In the *Hung lu meng*, the most popular Chinese novel, probably written about A.D. 1700, the hero and heroine are cross-cousin. The Chinese have no term meaning "cross-cousin marriage."

¹⁰² Possibly the terms yi and ssu, in sentences 3 and 4, arose from the sororate. The word ssu⁽²⁹⁹⁾ means "private" or "secret." In ancient China, the sisters of the wife were not allowed to spend the whole night in the chamber of their husband, which was the privilege of the wife only. The sisters of the wife were obliged to leave the chamber of the husband during the night.

¹⁰³ Ch'u ("outside") no longer seems to be used with this meaning. The modern term is wai sheng.⁽¹⁷⁴⁾

¹⁰⁴ Tsu⁽¹⁷⁰⁾ is formed with the word nü ("woman"). It is used for the brother's daughters in the *Han shu*. T.Y., sect.⁽¹⁾ p. 266.

Commentary. Tsu is used in this sense in the Tso chuan.

7. The grandsons of the sisters (son of the ch'u) are called li⁽³⁰⁵⁾ sun.⁽³⁰¹⁾ A woman calls the grandsons of her brothers (sons of the tsu) kuei sun.⁽³⁰²⁾ The sons of daughters are called wai sun.⁽³⁰⁵⁾ When two women have the same husband, the latter calls the older ssu⁽¹¹³⁾ and the younger, ti.⁽¹¹⁴⁾

Commentary. The term t'ung ch'u⁽³⁰⁶⁾ ("to go out together") is applied to sisters who have married the same man. According to the Kung-yang chuan, the feudal lords exercised the sororate.

8. A woman calls the wife of her husband's older brother sao,⁽¹⁶⁸⁾ and the wife of her husband's younger brother fu.⁽⁴⁷⁾

Commentary. At present (fourth century A.D.) hsün fu⁽³⁰⁷⁾ means bride.

9. The wives of older brothers call the wives of younger brothers ti fu.⁽³⁰⁸⁾ The wives of younger brothers call the wives of older brothers ssu fu.⁽³⁰⁹⁾

Commentary. Now both the older and younger fu are called tsu li.⁽¹¹⁵⁾

IV. *Hün yin*,⁽³¹⁰⁾ Marriage.

1. The wife calls the husband's father chiu,^(175, 106) and the husband's mother ku.^(166, 107) When the parents of the husband are dead, the word hsien⁽²⁰⁾ ("former") is prefixed to chiu and ku. While they are alive, she calls them chün chiu and chun ku.

Commentary. This use of the term hsien is found in the Kuo yü.¹⁰⁸

¹⁰⁵ Li⁽³⁰³⁾ means "separated." Kuei⁽³⁰⁴⁾ means "going back." The same term, wai sun⁽³⁰⁵⁾, is now used for the sons of daughters.

¹⁰⁶ Chiu is used for the brothers of the mother and the father of the husband. Here again is a clear indication of cross-cousin marriage, since in such a union the husband's father would be the brother of the wife's mother. The father of the wife is called wai ("external") chiu.

¹⁰⁷ Ku is used for the husband's mother and for the father's sister. This also indicates cross-cousin marriage, in which the husband's mother would be the sister of the wife's father.

¹⁰⁸ Chun tsu⁽³¹¹⁾ is a term which in the canon signifies noble birth and is translated "superior man." In ancient China, the feudal lords were called chun⁽¹¹²⁾ and their wives, hsiao chun⁽³¹³⁾ ("little lord"). Chun may be used in addressing anyone, as a sign of respect. It may also be used in addressing women, and in the modern drama a man may address his mother as t'ai chun⁽³¹⁴⁾ ("great and respected"). Hsueh sheng tzu tien,⁽³¹⁵⁾ sect.⁽¹⁾ p. 4.

In the Book of Charges, parents are called chün. In K'ung Ankuo's preface to the History, it is said that the ancestors are called chun. In the Han History, husband and wife call each other chun. In the Historical Records of Ssu-ma Ch'ien, the nobility are called chun. Tsu yüan⁽¹⁹⁹⁾ sect.⁽¹⁾ p. 33.

2. A woman calls the concubine of her husband's father hsiao ku.^(316,109) She calls her husband's older brother hsiung chung.⁽¹¹²⁾

Commentary. The term hsiung chung⁽¹¹²⁾ is now colloquially written.⁽³⁶⁹⁾ The word⁽¹⁰⁹⁾ when used in this sense is pronounced chung.

3. A woman calls her husband's younger brother shu.⁽¹⁵⁸⁾ She calls the older sister of her husband nu chung⁽¹²²⁾ and the younger sister of her husband nu mei.^(124,110)

Commentary. The term nu mei is still used.

4. The wives of the sons are called fu.⁽⁴⁷⁾ The wife of the oldest son is called ti fu.⁽³¹⁸⁾ The wives of the younger sons are called shu fu.^(319,111) The husband of a daughter is called hsu.⁽¹⁰⁶⁾ The father of a daughter's husband is called yin.⁽³²⁰⁾ The father of a son's wife is called hun.^(321,112) The clan of the father (the speaker's clan) is called tsung tsu.^(253,113) The clans of the mother and wife are called hsiung ti,⁽³²²⁾ ("brothers"). The parents of husband and wife call each other hun yin.⁽³¹⁰⁾ The husbands of sisters call each other ya.⁽³²³⁾

Commentary. In the Odes, the term ya is used in this sense. At present (fourth century A.D.) the people east of the Yangtse use the term liao

¹⁰⁹ Hsiao ku is literally "younger aunt."

The word⁽¹⁰⁹⁾ when pronounced kung means "just," "public," "duke," etc

¹¹⁰ Nu mei is used in this sense in the Hou Han shu. Tsu yuan, sect.⁽¹⁾ p. 252.

The modern usage is to call the husband's older sister ta ku and the husband's younger sister hsiao ku.⁽³¹⁷⁾ *Ibid.*, p. 261.

The different titles used by a woman for the older and younger brothers of her husband may indicate the junior levirate.

¹¹¹ Chung fu.⁽³²⁵⁾ The word shu⁽²⁰⁸⁾ means "common" or "ordinary." Chung means "many." Chung tzu means "younger sons." Chung hua ta tsu tien, sect.⁽¹⁶²⁾ p. 262.

¹¹² Hun yin, the terms used by the parents of the husband and wife in addressing each other, when used together mean "marriage," indicating that in ancient China marriage was considered primarily as a union of families, rather than a union of two individuals. This view is directly stated in the Book of Rites. In modern usage, hun yin is used as "marriage," but the use of the terms by the parents in addressing each other has been dropped, and they call each other ch'in chia⁽³²⁶⁾ ("related families").

According to the Odes, husband and wife call each other hun yin. The Po hu t'ung states that hun indicates the afternoon, the time of the marriage ceremony, while yin indicates that the wife follows the husband.

¹¹³ Patrilineal descent is assumed, but not directly stated, Tsu yuan, sect.⁽¹⁾ p. 272.

hsu.⁽³²⁴⁾¹¹⁴

5. The clan of the wife call the clan of the husband hun hsiung ti⁽³²⁸⁾ and are called by them yin hsiung ti.⁽³²⁹⁾

Commentary. In ancient days, hun yin was equivalent to hsiung ti.⁽³²⁰⁾

6. Pin⁽²⁵⁴⁾ is the equivalent of fu⁽⁴⁷⁾ ("married woman").

Commentary. The term is so used in the History.

7. Those who call a man chiu⁽¹⁷⁵⁾ are called by him sheng.⁽¹⁷³⁾¹¹⁵

GROUP TERMS

I. *Chia*⁽¹⁹⁾

Chia means a dwelling or house. It is analyzed as three persons under one roof, on the authority of Kuan Tzu. Husband and wife become a chia. According to the Tso chuan, chia referred to woman, shih⁽³³⁰⁾ to men (18th year of Wang Kung). The commentary adds that the husband called the wife chia (15th year of Hsi Kung). Chia, combined with other elements, was used for the older members of the clan. For members of the clan younger than the speaker, sui⁽²⁴⁾ was used. In the expression T'ien chia⁽³³¹⁾ ("family of Heaven") the emperor referred to the nation. A similar use is reflected in the expression ssu hai wei chia,⁽³³²⁾ ("all within the four seas form one family"). In the canon, chia is also used for a specialist; for example, wen hsioh chia⁽³³³⁾ ("scholar"). When the word is read ku, it is used as a title of respect for a woman. The emperor and the nobles called their mothers ku, Hou Han shu, Chap.⁽³³⁴⁾ C.H., sect.⁽¹¹⁾ p. 148.

II. *Tsu*⁽¹⁹⁰⁾

Tsu means "connected." Descendants are called tsu. Father, son, and grandson, are called the three tsu. The nine generations, four above and four below the speaker, within which the members had mourning obligations toward each other, are called "the nine tsu." The term is also used for members of the clan outside the degree of mourning. When tsu is used as a verb, it means that the punishment for a crime extends to the whole family of the individual responsible for the crime (Book of History). Tsu is used in the sense of "class" or "category"; for instance, shui tsu⁽³³⁵⁾ ("water animals"). The term is used for married people living together. It is also a collective term for the clan, whose members individually are called shih.⁽³³⁶⁾ C.Y., sect.⁽¹⁹⁴⁾ p. 203.

¹¹⁴ In modern usage, the husbands of sisters do not usually use either ya (the ancient term) nor liao hsu (fourth century A.D.) in addressing each other. Instead, they use the term lien chin.⁽³²⁷⁾ Lien means "connected" and chin is used for the overlapping sides of a long gown.

¹¹⁵ This sentence has previously occurred in the commentary, but not in the text of the Erh ya.

III. *Shih*⁽³³⁶⁾

Shih is used for branches of the clan. In ancient China, shih was used for the commoners, while hsin⁽³³⁷⁾ was applied to the nobility, but in modern usage shih and hsin are synonymous. The word is used as an official title. A married woman may be referred to by her maiden name and the word shih; i.e. before marriage, her hsin⁽³³⁷⁾ ("surname") was that of her father, while after marriage, her hsin is that of her husband, while her father's hsin is her shih. Shih may indicate common descent (Feng su t'ung⁽³³⁸⁾). The term was anciently used for the personal name (ming or hao), as opposed to hsin⁽³³⁷⁾ ("surname"). Since Ssu-ma Ch'ien (second century B.C.) this distinction between shih and hsin has been confused. T.Y., sect.⁽²⁾ p. 220; C.H., m sect.⁽¹⁹⁴⁾ p. 206.

IV. *Tang*⁽³³⁹⁾

In the Chou li, 500 chia ("families") constitute a tang. The term is used for relatives, both by descent (ch'ing tsu⁽³⁴⁰⁾) and affinity (yin tsu⁽³⁴¹⁾). In the Tso chuan, the term is used for friends. In the Analects the term is used for a party or gang, helpers in bad enterprises. In the History, the term appears in the sense of "to be partial," "to side with someone." In the Han shu, the word is used as "if." Hsun Tzu employs it in the sense of "straight-forward." The word also figures as a surname. In modern usage, the term denotes "party"; for instance, Kuo-min-tang, "people's party." T.Y., sect.⁽¹⁶⁴⁾ p. 124.

V. *Hsin*⁽³³⁷⁾

Hsin means "birth" or "origin," "to distinguish the offspring of a marriage." In the Odes, tzu hsin⁽³⁴²⁾ signifies "descendant." In the History, po hsin⁽³⁴³⁾ ("the hundred surnames") designates "subjects" in opposition to "ruler."

Before the three dynasties (i.e. the legendary period) shih⁽³³⁶⁾ was used for men, while hsin was used for women. In the ancient period, hsin was applied only to the nobility. After the three dynasties, the two terms were used interchangeably. A woman¹¹⁶ was called hsin, and so the word woman (nü⁽¹⁵¹⁾) was used in writing the word hsin.

In the Hsueh wen and the Po hu t'ung, the term indicates a single or common origin. In the Hai yu chi, the term indicates relationship by descent. In a commentary on the Book of Rites, the originator of the clan, the first ancestor, is called cheng hsin. In the History, po hsin was first used in the sense of "the hundred officers" who were relatives of the ruler, and only later with the meaning of "nation" or "people." In Japan, po hsin is the

¹¹⁶ T'ung tzu shih tzu lu⁽³⁴⁴⁾ cited in T.Y., sect.⁽¹⁾ p. 262

term for farmers. (It is assumed, but not expressly stated, that the hsin descends in the father's line.) C.H., sect.⁽⁹¹⁾ p. 48.

VI. *Chih p'ai*⁽³⁴⁵⁾

Both words of this expression appear separately. *Chih*⁽³⁴⁶⁾ is used in the Odes as "descendant" and "having a common origin." In the Tso chuan it means "to support" or "to maintain." In the Ta Tai li it designates "to count." It also signifies "to separate," and is used in the expression the "twelve branches," terms used in Chinese astronomy. In the Book of Changes it denotes the four limbs, and in the Odes, the branches of a tree. *Chih tzu*⁽³⁴⁷⁾ denotes the son of a concubine. *Chih liu*⁽³⁴⁸⁾ is applied to the branches of a river. T.Y., sect.⁽¹⁹⁴⁾ p. 155.

P'ai⁽³⁴⁹⁾ ("to flow from") may be used either for a branch or a tributary of a river. The School of Law in ancient China used the term in the sense of "party." The word also means "to distribute." T.Y., sect.⁽⁹⁰⁾ p. 79.

Chih p'ai is used for "a branch from the main body" (Po Ch'i shu), and as a relationship term, for a branch of the clan. In modern usage it is not of great importance. T.Y., sect.⁽¹⁹⁴⁾ p. 155.

VII. *T'ang*⁽¹²⁷⁾

The word means "hall" or "temple," and is used for the central room of a house. In a yamen, the office of the official is called *t'ang*. In the Odes the word means "plateau," and in a commentary on the Odes the expression *po t'ang*⁽³⁵⁰⁾ is used as a polite term for woman. The word occurs in *tseng t'ang*⁽³⁵¹⁾ and *ling t'ang*⁽¹⁸⁶⁾ polite expressions in referring to someone else's mother. *T'ang* embraces those who have the same father's father. *T'ang hsiung ti*⁽³⁵²⁾ means "those with the same paternal grandfather as myself." *T'ang po shu*⁽³⁵³⁾ is used for the male first cousins of the father, of the same surname. T.Y., sect.⁽¹⁾ pp. 158-60.

VIII. *Fang*⁽³⁵⁴⁾

The word indicates a side room, as opposed to *t'ang*, the central hall, and is so used in the Odes. In the Tso chuan it designates an archery gallery, and in the History it appears as a personal name. It is also the name of one of the twenty-eight constellations. Another meaning is that of a whole which is subdivided or partitioned, for instance, a bee-hive. It is commonly used for "house" or "residence." As a relationship term it means "the branches of a clan," whether living together or apart. T.Y., sect.⁽¹⁹⁵⁾ p. 74.

IX. *Ch'in*⁽³⁵⁵⁾

Mencius uses *ch'in* as "parents," as a verb "to love," and as "near." In the Kuo yü it is used as "relatives" in the phrase "the six *ch'in*" (father, mother, older and younger brothers, wife, sons). In the Tso chuan it means

"those who support (or assist)," and "a party." In the Odes it means "to act alone" or "without help." In the Great Learning it means "new." In the Hou Han shu it is used in an expression (ch'in chia⁽³²⁶⁾) which is a general term for clans related by marriage. In the T'ang shu⁽³⁵⁶⁾ it is a term for the parents of a son-in-law or a daughter-in-law. The word occurs in a number of phrases. A modern expression is ch'in tsu⁽³⁴⁰⁾ ("clan"). In Japan this phrase is used for relatives both by descent and affinity, but in China it is used for relatives by descent only. The Japanese meaning probably reflects older Chinese usage. The Book of Rites employs the phrase ch'in shu⁽³³⁷⁾ for relatives both by descent and affinity, and Mencius uses a phrase with a similar meaning, ch'in ch'i⁽³³⁸⁾ which K'ung Ying-ta analyses as ch'in, meaning relatives by descent, and ch'i, relatives by affinity. The Han shih wai chuan uses this phrase for "parents," and the Tso chuan for "father, sons and brothers." T.Y., sect.⁽³³⁹⁾ pp. 4, 5.

X. *Ch'i*⁽³⁶⁰⁾

In the Analects, ch'i is used in the sense of "mourning." In the History it means "to be sorry," "to be annoyed." In the Book of Rites it means "angry." The word also signifies "battle-axe," and is used as a surname. As a relationship term it denotes "relatives by affinity." T.Y., sect.⁽¹⁹⁴⁾ p. 68.

XI. *Shih*⁽³⁶¹⁾

Shih is used by Mencius as "from father to son," i.e. one generation. In the Book of Rites and the Han shu, it means "year." It formerly signified a change in name due to a new title or official position. It also has the meaning "thirty years," i.e. a generation, and indicates an old friendship between clans which has lasted more than one generation. The word occurs in such phrases as shih ch'ai⁽³⁶²⁾ ("the world") and shih yi⁽³⁶³⁾ ("friends"). T.Y., sect.⁽⁸⁷⁾ p. 64.

XII. *Tai*⁽³⁶⁴⁾

Tai means "succeeding," "instead of," "to replace," "the one who takes the place of someone else" (a son succeeding a father). It is a surname. It is used in the sense of "dynasty" in the expression "the three tai" (the Hsia, Shang and Chou dynasties). As a relationship or group term it means "a generation" in the sense explained above (p. 625) T.Y., sect.⁽⁸⁷⁾ p. 160.

XIII. *Tsung*⁽³⁶⁵⁾

The word means "ancestor," and those who have the same surname call themselves t'ung tsung⁽³⁶⁶⁾ ("having a common ancestor"). In the History, tsung means "the one who is respected and worshipped." In the Chou li, it means "to attend the summer audience of the emperor." In Ssu-ma Ch'ien, it means "goal," "end," or "purpose." It indicates the

different Buddhist sects or schools. It is a surname. The word is also used as "ideal." In the Book of Rites, *tsung jen*⁽³⁶⁷⁾ means "members of the same clan," and in the Hou Han shu and the Ming shih this expression is used for the imperial clan. In the Yi li, *tsung tzu* means "oldest son of the wife." In the Book of Rites, the son of concubine called the son of the wife *tsung hsiung*. *Tsung nü* meant "woman of the imperial clan." Later usage called the children of a distant clan-relative *tsiung hsiung*. *Tsung p'ai* is applied to branches of the clan, and also to "a school of thought." The expression *tsung ch'in*⁽³⁶⁸⁾ is used for the collateral lines in the father's clan. T.Y., sect.⁽⁹¹⁾ pp. 39-41.

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- Men of the father's clan
- Women who married into the father's clan
- Men of other surnames who have married women of the father's clan
- Women of the father's clan who have married into other clans.
- Men of other clans, related to the father's clan by marriage
- Women of other clans, related to the father's clan by marriage

TABLE I
THE FATHER'S CLAN

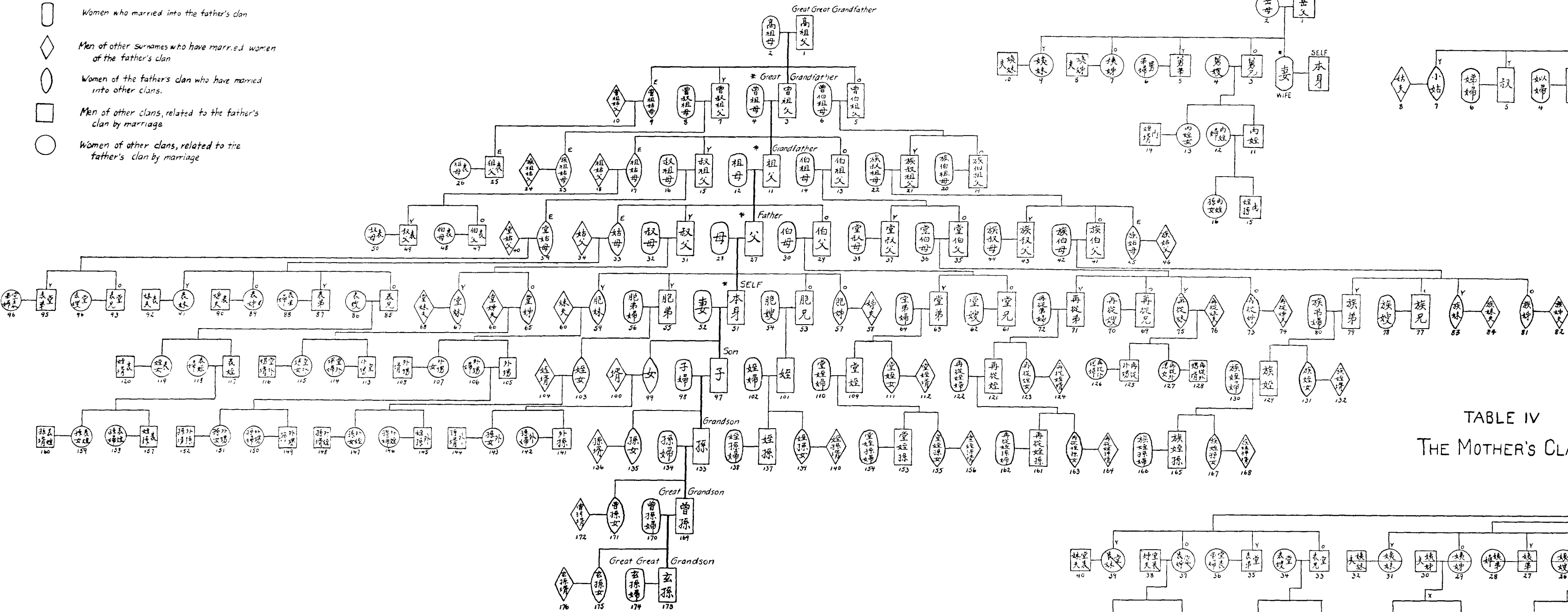


TABLE II
TERMS USED BY THE HUSBAND FOR HIS WIFE'S CLAN.

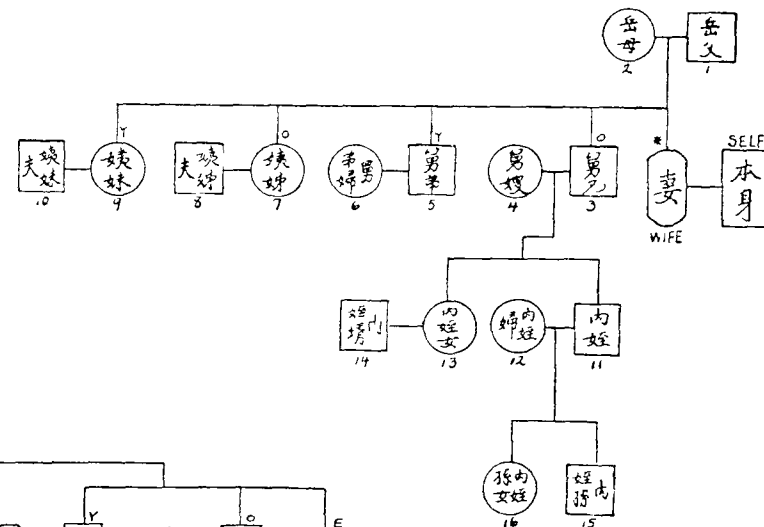
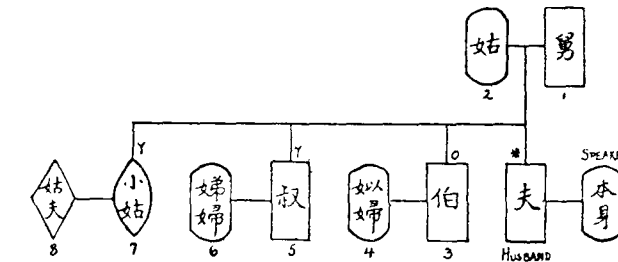
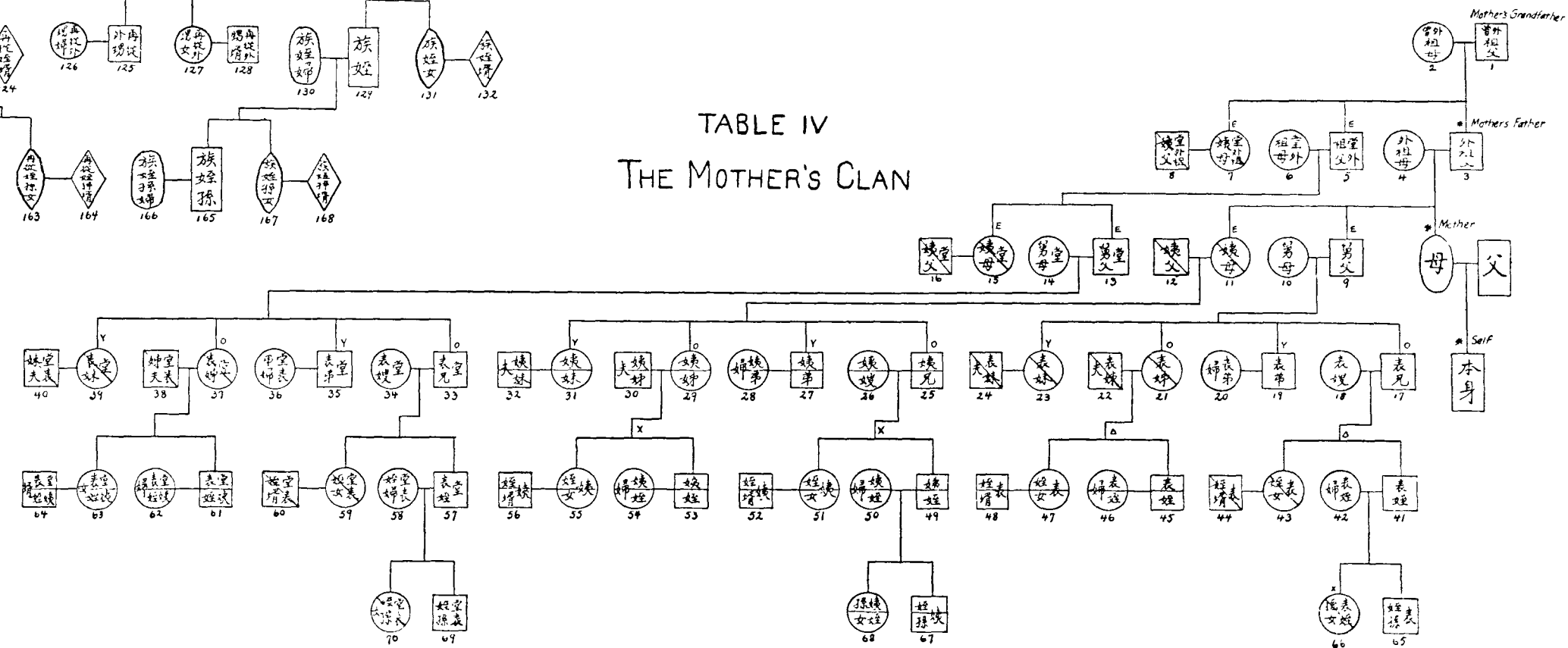


TABLE III
TERMS USED BY THE WIFE FOR HER HUSBAND'S CLAN.



- Male of Mother's clan
- Women who married into Mother's clan
- Men of other clans who have married members of Mother's clan.
- Female members of Mother's clan who marry into other clans
- Men of other clans, related to Mother's clan by marriage
- Women of other clans, related to Mother's clan by marriage

TABLE IV
THE MOTHER'S CLAN



CHINESE INDEX

- | | | |
|----------|----------|----------|
| (1) 丑 | (25) 舍姪 | (49) 肉子 |
| (2) 辰 | (26) 令 | (50) 内助 |
| (3) 曾祖王父 | (27) 令弟 | (51) 夫人 |
| (4) 曾大父 | (28) 父親 | (52) 太太 |
| (5) 曾翁 | (29) 爹爹 | (53) 師母 |
| (6) 曾祖王母 | (30) 爸爸 | (54) 昆季 |
| (7) 大父 | (31) 爺爺 | (55) 昆玉 |
| (8) 大母 | (32) 母親 | (56) 哥 |
| (9) 伯翁 | (33) 媽媽 | (57) 母兄 |
| (10) 伯公 | (34) 娘 | (58) 母弟 |
| (11) 伯婆 | (35) 阿媽 | (59) 長兄 |
| (12) 叔翁 | (36) 世父 | (60) 伯兄 |
| (13) 叔婆 | (37) 世母 | (61) 大兄 |
| (14) 姑公 | (38) 伯伯 | (62) 姐 |
| (15) 高堂 | (39) 父子 | (63) 女兄 |
| (16) 椿萱 | (40) 叔姪 | (64) 女弟 |
| (17) 嚴慈 | (41) 孀母 | (65) 長姊 |
| (18) 考妣 | (42) 姑姊妹 | (66) 伯姊 |
| (19) 家 | (43) 姑姑 | (67) 姊丈 |
| (20) 先 | (44) 姑夫 | (68) 姊壻 |
| (21) 考 | (45) 姑父 | (69) 妹丈 |
| (22) 妣 | (46) 從祖父 | (70) 妹壻 |
| (23) 王父 | (47) 婦 | (71) 外 |
| (24) 舍 | (48) 内人 | (72) 表兄弟 |

- | | | |
|---------|-----------|------------|
| (73) 嫡子 | (97) 丈母 | (121) 小 |
| (74) 宗子 | (98) 內兄 | (122) 女公 |
| (75) 餘子 | (99) 妻嫂 | (123) 女叔 |
| (76) 庶子 | (100) 內弟 | (124) 女妹 |
| (77) 別子 | (101) 內弟婦 | (125) 叔妹 |
| (78) 兒 | (102) 內妹 | (126) 姑娘 |
| (79) 男 | (103) 外子 | (127) 堂 |
| (80) 息 | (104) 丈夫 | (128) 外王父 |
| (81) 媳婦 | (105) 夫君 | (129) 外大父 |
| (82) 女壻 | (106) 壻 | (130) 外翁 |
| (83) 子壻 | (107) 夫壻 | (131) 外王母 |
| (84) 孫子 | (108) 伯 | (132) 外公 |
| (85) 孫兒 | (109) 公 | (133) 外婆 |
| (86) 丈人 | (110) 婆 | (134) 姨夫 |
| (87) 子 | (111) 姑嫜 | (135) 外兄弟 |
| (88) 泰山 | (112) 兄公 | (136) 姨子 |
| (89) 泰水 | (113) 女以 | (137) 從母兄弟 |
| (90) 已 | (114) 娣 | (138) 從母姊妹 |
| (91) 寅 | (115) 妯娌 | (139) 夫 |
| (92) 外舅 | (116) 母母 | (140) 列女傳 |
| (93) 岳丈 | (117) 姆姆 | (141) 妻 |
| (94) 翁 | (118) 姥姥 | (142) 父 |
| (95) 婦公 | (119) 孀 | (143) 岳父 |
| (96) 外姑 | (120) 大 | (144) 父老 |

- | | | |
|----------|------------|--------------|
| (145) 母 | (170) 姪 | (195) 表 |
| (146) 母音 | (171) 姪子 | (196) 申 |
| (147) 母財 | (172) 姪女 | (197) 內兄弟 |
| (148) 分母 | (173) 甥 | (198) 外親 |
| (149) 分子 | (174) 外甥 | (199) 辭源 |
| (150) 子金 | (175) 舅 | (200) 中華大字典 |
| (151) 女 | (176) 未 | (201) 內 |
| (152) 兄 | (177) 通訓定聲 | (202) 系 |
| (153) 弟 | (178) 姨 | (203) 族長 |
| (154) 姊 | (179) 高 | (204) 顏真卿家廟碑 |
| (155) 姊 | (180) 戎 | (205) 嫡 |
| (156) 妹 | (181) 曾 | (206) 嫡母 |
| (157) 仲 | (182) 曾祖 | (207) 嫡嗣 |
| (158) 叔 | (183) 曾孫 | (208) 庶 |
| (159) 季 | (184) 玄 | (209) 庶母 |
| (160) 伯父 | (185) 胞 | (210) 庶長 |
| (161) 祖 | (186) 令堂 | (211) 後 |
| (162) 午 | (187) 同堂 | (212) 後夫 |
| (163) 高祖 | (188) 從 | (213) 後妻 |
| (164) 亥 | (189) 再 | (214) 後生 |
| (165) 孫 | (190) 族 | (215) 後母 |
| (166) 姑 | (191) 族祖王父 | (216) 繼父 |
| (167) 姑母 | (192) 族兄弟 | (217) 繼母 |
| (168) 嫂 | (193) 三從 | (218) 繼姑 |
| (169) 夫婦 | (194) 卯 | (219) 繼室 |

(220) 繼配	(245) 阿爹	(270) 族兄弟
(221) 繼舅	(246) 阿爺	(271) 親同姓
(222) 繼承	(247) 阿母	(272) 從父兄弟
(223) 承	(248) 阿家	(273) 玄孫
(224) 承祧子	(249) 阿姑	(274) 來孫
(225) 嗣司	(250) 阿兄	(275) 暱孫
(226) 嗣子	(251) 阿公	(276) 仍孫
(227) 繼	(252) 阿姨	(277) 雲孫
(228) 妾	(253) 宗族	(278) 王姑
(229) 主父	(254) 嬪	(279) 曾祖王姑
(230) 主母	(255) 爾雅	(280) 高祖王姑
(231) 姨娘	(256) 四部備要	(281) 從祖姑
(232) 小婦	(257) 中華書局	(282) 族祖姑
(233) 娘子	(258) 郭璞	(283) 從祖王母
(234) 送子娘娘	(259) 金蟠	(284) 族祖王母
(235) 乾	(260) 蒼頡篇	(285) 叔母
(236) 坤	(261) 蒼頡	(286) 從祖母
(237) 乾爺	(262) 王母	(287) 族祖母
(238) 乾娘	(263) 王	(288) 族曾王父
(239) 娉	(264) 高祖王父	(289) 族曾王母
(240) 娉會	(265) 高祖王母	(290) 江東
(241) 未婚夫	(266) 從祖祖父	(291) 暱
(242) 未婚妻	(267) 從祖祖母	(292) 母黨
(243) 阿	(268) 叔父	(293) 外曾王父
(244) 阿翁	(269) 族父	(294) 外曾王母

- | | | |
|------------|--------------|-------------|
| (295) 從舅 | (320) 姻 | (345) 支派 |
| (296) 從母 | (321) 婚 | (346) 支 |
| (297) 妻黨 | (322) 兄弟 | (347) 支子 |
| (298) 生 | (323) 亞 | (348) 支流 |
| (299) 私 | (324) 僚壻 | (349) 派 |
| (300) 出 | (325) 家婦 | (350) 北堂 |
| (301) 離孫 | (326) 親家 | (351) 尊堂 |
| (302) 歸孫 | (327) 連襟(連衿) | (352) 堂兄弟 |
| (303) 離 | (328) 婚兄弟 | (353) 堂伯叔 |
| (304) 歸 | (329) 姻兄弟 | (354) 房 |
| (305) 外孫 | (330) 室 | (355) 親 |
| (306) 同出 | (331) 天家 | (356) 唐書蕭萬傳 |
| (307) 新婦 | (332) 四海為家 | (357) 親屬 |
| (308) 姊婦 | (333) 文學家 | (358) 親戚 |
| (309) 妯娌 | (334) 曾世叔妻傳 | (359) 酉 |
| (310) 婚姻 | (335) 水族 | (360) 戚 |
| (311) 君子 | (336) 氏 | (361) 世 |
| (312) 君 | (337) 姓 | (362) 世界 |
| (313) 小君 | (338) 風俗通 | (363) 世誼 |
| (314) 太君 | (339) 黨 | (364) 代 |
| (315) 學生字典 | (340) 親族 | (365) 宗 |
| (316) 少姑 | (341) 姻族 | (366) 同宗 |
| (317) 小姑 | (342) 子姓 | (367) 宗人 |
| (318) 嫡婦 | (343) 百姓 | (368) 宗親 |
| (319) 庶婦 | (344) 通志氏族畧 | (369) 兄鍾 |

THE East Texas region may be defined as that part of Texas lying east of longitude 96 W. It is not set apart from the region to the west by any change in level, rainfall, or climate, but by a difference in soil and consequently by a heavy growth of timber, mostly pines. The soil is an Eocene red clay and sand while that of the prairies to the west is a black clay of Cretaceous origin.

The southern portion of East Texas, that portion near the sea, has soils of more recent formation and of a character not altogether favorable to forests. The pines do not, therefore, come solidly to the coast, though they reach it in places. This part has clumps of trees and patches of forest of various sizes interspersed with strips and patches of prairie and treeless marshes. As a consequence it differs materially in its essential geographical features from the region of solid forests to the north "East Texas" then divides logically into two distinct sub-areas, Upper East Texas, or Northeast Texas, and Lower East Texas, or Coastal East Texas.

The two divisions gave rise to distinct cultural practices in the aboriginal population. The historical Indian tribes of the East Texas coast and Lower Louisiana lived largely on sea foods and were given to cannibalism. The Attacapan tribes occupied the coast of Louisiana and Texas as far south as Galveston bay. From that point south to below Corpus Christi the coast region was occupied in early historical times by the Karankawan tribes. These two coastal groups had much in common, both were by reputation cannibalistic and both had a sea food economy. The historical tribes of Northeast Texas were agricultural village dwellers who organized vast confederacies against the predatory Apache and Comanche, made beautiful pottery on a large scale, were peaceable and kindly towards well-intentioned strangers, and loathed the cannibal tribes.

The archaeology of these regions is in close conformity to the ethnology.

The writer has been doing archaeological research in East Texas during the last two and a half years and this paper is to give to the interested public a brief account of the results to date.

The Coast Region has not been explored so extensively as the Northeast, but the work done there was significant and will be dealt with briefly at this point.

In the spring of 1931 the writer was invited by Dr. A. R. Shearer of Montbelvieu, who has large land holdings bordering on Trinity or Upper Galveston bay, to visit him and inspect the numerous large shell reefs that lie along the old stream channels of the mud flats at the head of the bay, all

of which contain potshards throughout. I visited him early in June and inspected several of these reefs. They are sometimes fifteen feet in depth, from thirty to seventy-five feet in width at the bottom, and may be a quarter of a mile in length. I went to places where they were being excavated with power shovels and carried away to dress highways, ballast railways, etc., and found their content to be astonishingly homogeneous from bottom to top. Everywhere and throughout they were composed 90 per cent or more of clam shells of one species (a *Cardium*) with a relatively small percentage of fresh water mussel shells and a very noticeable sprinkling of potshard. This clam is found in both salt and fresh water and is abundant in the rivers.

It was obvious at a glance that the reefs could not be kitchen middens, despite the omnipresent shard; they were too large, their composition was too exclusively of fresh water shells and of shells of mollusks never eaten in the immediate region of the oyster, edible clams, and dwarf conch. All of these figure in the genuine middens of the coast and all are almost wholly absent from the reefs. Finally, the reefs do not contain fish bones, deer bones, charcoal, ashes, and the other concomitants of genuine middens.

From study of a reef still washed by the stream of the Old river the solution of the problem of the origin and character of the reefs became obvious.

The shells are washed out of the stream beds and freed from mud by the running water. When the streams fall and the waves beat upon the exposed shells, they are lifted and thrown upward into ridges along the bank. This process is cumulative until a reef is formed. Inasmuch as the water-level rises and falls, from stream floods, tides, and tropical storms through a distance of fifteen feet or more the reefs may be built up to that height. The writer found places where the shell had been carried up the sloping side of the reef next to the water over the top and dumped down the steep lee side in recent storms and floods. The reefs, where they lie next to the streams are continually migrating to the north, with the prevailing winds, and some are probably moved many feet in a single great storm.

The shard behaves exactly like the shell, hence its presence, in water-worn form, throughout the reefs. In some places, where the reefs had been long remote from the streams, there was evidence that the Indians had camped on them and they were covered with genuine kitchen refuse, including shard free from water wear. Much of the shard probably came down the streams in heavy floods. Other kitchen midden elements such as bones, broken flint, etc., could not be lifted by the waves, hence are not found in the reefs.

These reefs differ from the ordinary barrier reef (1) in always paralleling

old stream beds; (2) in resulting from the combined action of streams and waves.

The pottery of the Trinity bay region differs markedly from that of the lower coast and of Northeast Texas. It is of good quality, strong and well formed, but rarely decorated. The decoration, when present, is usually incised in the form of geometrical figures, as a rule small triangles. A few pieces of shard show signs of painting but these were so rare and so small as to give little evidence as to the designs. Our party found no whole pottery near the coast. We uncovered several burials but found few artifacts with the skeletal remains.

The middle coast from Galveston to Corpus Christi bay, which does not come within the province of this paper, has the same type of burial as the upper coast. One very ingenious artifact from a burial on the coast below Corpus Christi, though it does not belong to East Texas proper, is so significant that it will be described at this point. It is a tubular piece of sandstone excavated into trumpet form, about eight inches long by some two inches wide at the open end and fitted with a mouthpiece made of a section of a lower human arm bone. It contained ground up asphalt and charred vegetation, indicating that it was a fire-keeping and fire-making apparatus. It must have been very valuable for this purpose in a damp region having only poor fire wood. The writer knows of several specimens of this apparatus in private collections. They come, as one would expect, from regions of gnarled tough scrub growth where making fire would be difficult and where a means of carrying and preserving it would have high value. It has been suggested that they may bear a relation to the "cloud-blowers" of the Pueblo area.

In November, 1931, the writer explored a burial place on Agua Dulce bayou about eight miles west of Robstown. At this place he found the remains of about twenty-five butchered human bodies buried in a wide shallow pit, possibly the refuse of a characteristic Karankawa cannibal feast. Many of the bones show marks of axes and all long bones had been broken into at least two or three pieces. This find tends to confirm the historical reputation of the Indians of this region for cannibalism.

The upper two-thirds of East Texas is a region of red clay and sand, covered with heavy forests and of uniform geographical character. In fact, it is identical in character with northern Louisiana, southern Arkansas, and the pine-forested portions of Tennessee, Mississippi, Alabama, and Georgia. It is certain that the culture of this entire region had long been essentially of the same character before the coming of the whites. Throughout there had been for many centuries a pronounced village life, with houses

made of upright poles and wattle plastered with mud and covered with thatch. Stone axes, plummet stones, boat-stones, banner-stones, etc., were made by grinding, polishing, cutting, and drilling, supplemented by the older art of chipping and flaking. Shell was shaped into beads, gorgets, ear plugs, drinking vessels, etc. Pottery displayed great variety in size, form, materials of composition, strength, and methods of ornamentation. Horticulture involved the cultivation of maize, tobacco, beans, squashes, sun-flowers, and probably melons. Sun and fire were worshipped in extensive rites and a worship of the cardinal points or "four winds" gave a sacred character to the number four and resulted in the use of the equal-armed cross in ornamental designs on gorgets and pottery. Mounds of various shapes were built over the remains of the dead, as terraced areas for safety in time of floods, and possibly as sites for temples. Finally, the burial of highly prized possessions with the dead both in the mounds and in ordinary burials was a practice throughout the region. In all of these culture practices Northeast Texas is entirely of a piece with the rest of the region and is rather sharply at variance with other parts of Texas.

In Northeast Texas there are sometimes within short distances rather clear-cut changes in the decorative designs on pottery, in the forms and uses of vessels, in the character and quantities of beads, and in other cultural traits; but the general culture level and the fundamental traits remain much the same.

Early in the summer of 1930 the University of Texas started research in this region and has continued work to the present time except for about three months of midwinter. In winter there is too much water in the ground for successful digging, except in a few elevated sites, or when exploration involves only surface work.

Our first expedition began work along the Red river in Lamar, Red River, and Bowie counties. We found numerous burial and camp sites, but some of them had been undermined by floods so that much of their contents had been carried away. Most of the sites had but little in them because the floods and the shifting of the river banks had not permitted the early inhabitants to remain very long at one place. Reconnoissance indicated more satisfactory places along the smaller streams to the south. Accordingly, about the middle of the summer, we moved to the Russell Brothers farm, some seven miles east of Pittsburg, on the line between Camp and Titus counties. Here we got into one of the richest sites encountered in all Texas. Intrinsically significant and highly representative of the whole region, it will be dealt with in considerable detail, so that only the differences in the returns from the thirty-two other sites explored to the

date of writing will require notice later. There were evidences of ancient village life extensively spread up and down a small perennial stream; but the ancient burial place, found in the sandy bank of the stream kept our party of five men eagerly employed for four weeks.

All of the burials were old. They ranged in depth from three to five and a half feet. The deep burials were very old, and sometimes much of the earth above them had been deposited by floods or winds after the interment. Only three burials contained any traces of human remains, and these were very meager. In the remainder, recognized by the arrangement of the pottery and other artifacts or by the difference of the grave filling from the materials of the banks, the human remains had completely disappeared. This was due partly to age, of course, but also in part to the position of the burials in low ground, where the earth contained a great deal of water; to the presence of carbonic acid in the water, coming from forest fires; and to organic acids from the decay of large quantities of vegetable matter in this region. The uncertainty as to the quantities and the general effects of acids in the ground water renders the problem of determining age from skeletal remains difficult to solve.

There were no evidences of white contacts at this place, and very few in any of our East Texas operations.

We obtained here 268 specimens of pottery, 5 pipes, 2 ear plugs (in a grave from which all traces of bones had disappeared), 55 arrowpoints, 6 celts and a few other artifacts.

In this whole region nearly all stone materials for implements were from the Ouachita mountains of eastern Oklahoma and western Arkansas. The axes and celts are of hard slate, fine-grained sandstone and chert, while the arrowpoints are of chert. Occasional blades and spear heads of fine flint are made of materials from Central Texas. Axes are sometimes of iron ore and are always ground, after being first pecked or flaked into approximately the right form. There are short, cone-shaped celts, designed to be inserted in homes in the large end of a club-like handle; long, heavy, chisel-like celts intended to be used without hafting, and axes with grooved rings about the head for a withe or rawhide handle. One of these, from near Daingerfield, Morris county, made of limonite weighs about seven pounds. The forms and materials of the axes differ but little throughout the region.

The arrowpoints found in the Russell place were all of exactly the same type; namely, a small, thin, finely chipped point, triangular in form, and having a sharp, thin edge at the bottom instead of a tang. They were always in clusters of from three to fifteen, usually placed by the knee of the skeleton, with the points towards the feet. Evidently when buried with the

dead they were in arrows in quivers. They are of a type that would slip easily from the shaft and remain imbedded in the flesh of a wounded man or animal when the shaft came away. By promoting death from blood poisoning they would be more effective in war than in hunting. An astonishing fact concerning these points is that they were almost universally present in burials that contained arrowpoints of any description in all of the thirty-two sites worked in this region; and were, in the extreme Northeast, usually the only type found. This was the case at the Russell place. They were mixed with points possessing a rudimentary or completed tang in increasing numbers as one came towards the south. Strikingly uniform and found in both old and recent burials, they constitute a widespread and long-continued culture element.

The pottery at the Russell farm was surprising in many ways. Its variety in form and size indicated use for almost every possible purpose. Cooking-pots were large, plain, strong, and covered with soot and stains that made their use unmistakable. The largest specimen at this place would hold about four gallons. One found later at the R. L. Cason farm, about twelve miles from the Russell place, was seventeen inches in height by fourteen inches in greatest diameter, and had a content of about five gallons. The largest one we have found at all came from the H. R. Taylor farm, about thirty miles from the Russell place. This was eighteen by sixteen inches in extreme dimensions and would hold about seven gallons. These two large vessels were in perfect condition and are the largest specimens of pottery of any kind that we have found. As the cooking pots were all found sitting upright, they were probably buried with food in them. One of the large pots had a smaller one inside it. There was never more than one of the very large pots with a skeleton, and it was always placed near the foot.

The smaller cooking-pots merge into food bowls that were not used in cooking. These pots and bowls were placed about the head and shoulders of the body, sometimes several in a burial; and several of them contained the bones of birds or small animals. In one at the T. M. Sanders farm, on Red river, there were fish bones. The smaller cooking-pots were often beautifully ornamented in raised designs, with scalloped margins, graceful ears, nodes set on in lines, etc. Fine designs in incised lines were evidently left off because they soon became invisible from the effects of soot.

Bowls ranged in size from four-gallon vessels to toy-like specimens much smaller than tea cups. Most of them were ornamented, many of them in incised or carved designs of great intricacy and beauty. Many were covered with a slip of different color from the body, and the incised designs go down through the slip and so stand out in a color in marked contrast to that of the general surface.

The very large bowls, with content of several gallons, were obviously containers for seeds. According to the Spanish records the historical Indians of this region stored, in large pottery vessels, quantities of sunflower seeds, squash seeds, shelled corn, beans, etc.; and our finds confirm these observations.

Bottles are of many forms and sizes. The most intricate and elaborate decoration occurs on the bottles and bowls. The former are nearly all ornamented with incised or carved designs. A few have raised lines, which cut the surface into equal segments. We shall deal with the designs later.

Bottles range from nearly gallon size to some comparable with the tear bottle of the Orient. Small bottles and bowls so often accompanied the remains of children as to suggest, rather definitely, that they were toys. Usually the small bottles and bowls are crudely made, but exceptional pieces have perfect symmetry and beautiful, intricate designs.

One bowl of rare and interesting type was found at the Russell farm. It was of hemispherical configuration, covered over the whole outside surface with rounded nodes that had been stuck on the surface before firing, and had four conspicuous, hemispherical, hollow nodules or knobs, filled with clay pellets. These nobs were placed near the margin and divided the rim into equal segments. Bowls of this type make a pronounced rattle when shaken; and probably had skins stretched over them, so as to form a sort of tambourine. We later found several of these, of various sizes, at other sites.

Some small bowls merge into forms much resembling our saucers. These last were often used as paint containers, and several, at the time of burial, had been filled with prepared paint.

The pipes from the Russell site and nearby places were all of clay and all had a shallow, flaring bowl, brought to perfect symmetry inside by turning a bent twig in the bowl. This constitutes probably the nearest approximation to the lathe or potters' wheel found anywhere in America.

In sites further south the number of pipes increased both in burials and in fragmentary form in village sites. This seemed to indicate an increased practice towards the south of tobacco smoking. It is notable, too, that the pipes of Wood and Anderson counties are often more highly ornamented than those in the more northerly region, where we found several with stems of clay made in one piece with the bowl. These were discovered also by Harrington in Southwest Arkansas.

Ear spools occurred at the Russell farm and occasionally throughout the Northeast Texas region. The largest, a pair of symmetrical stone spools from the T. M. Sanders farm on Red river, Lamar county, were about one and one-half inches in diameter and were covered on the exterior side with



a, b, A bowl and a bottle of feather-weight type from the Riley farm, Upshur county. The decoration is always carved into the surface in this type and is very accurately worked out. It is so fragile that it must have been for ceremonial purposes only. Height of *a*, 5 1/2"; of *b*, 4 1/2".

c, d, e, Bowls set on a ring base with four legs from different sites in lower Northeast Texas. These come from burials near Frankston and Nacogdoches. Height of *d*, 7".

that some of the pots, at least, were buried empty and were placed in graves, as were weapons, for the continued use of the dead rather than as mere food containers.

Possibly some of this pottery, when buried in stacks, was cached in the burial places. Rarely were burials actually in hard clay beneath the sand. The soil of most burial places in Eastern Texas is of sand or of mixed sand and clay, so was easily excavated; and, as the burial sites were well kept in mind, they would naturally be the favorite places for hiding property that had to be temporarily abandoned. Mr. A. T. Jackson, our present field foreman, who has been in charge of most of our East Texas field operations, does not believe that any of the pottery was cached, but that the skeletal materials have simply disappeared from places where pottery has been found unaccompanied by human remains. On the other hand, Mr. Burleigh B. Gardner, former Tutor in Anthropology, who was in charge of field operations at the Russell place, felt sure that some of the pottery found at that site had been cached.

One bird effigy bowl is a fairly good representation of a duck. One spoon-like ladle of earthenware was found at this place.

One child's burial was accompanied by eight tiny vessels, which bears out an observation made above that such vessels were probably toys.

In two cases at this site vessels were above the body, implying an offering made at some time after interment.

The extreme length of this burial place was 126 feet by a width of 90 feet. The burials were rather close together, were in no particular order, but were rarely one above another. They were farther apart and more evenly spaced at the Russell place, where they were more nearly of one period.

Of the more important places explored we shall deal with only one more in this paper—the T. M. Sander's farm, near the postoffice of Direct, about twenty miles northwest of Paris, on the south bank of the Red river and the east bank of Bois d'Arc creek, Lamar county. Everything considered, this was the most important site we have explored in Texas. The burials were more numerous and much richer, especially in pottery, at the Russell, Riley, and Taylor places; but at the Sander's place, in addition to numerous uniquely interesting burials, there were domiciliary mounds, as well as deep and rich kitchen deposits. We worked here in the latter part of the summer of 1931.

The place is a combination of an extensive village site and a cemetery. It runs along the inner margin of a high terrace, about a half mile south of the present river channel, and is found, with interruptions, extending to the east for perhaps two miles.



a, Pipe found with skeleton of a tall man near Frankston, Anderson county. Extreme length, 3 1/2". Typical of this region.

b, A conch-shell gorget figuring a cross-in-circle design interwrought with a realistic, well-executed figure of a strutting turkey cock. Diameter, 4 3/4". Sander's place, Red river.



a, b, Two extraordinary bottles. One with a tubular cross in the middle opening on each of the four sides is from the Russel site, Titus county; the other, a beautiful tripartite bottle of blood red color and perfect symmetry is from the Sanders place on Red river, Lamar county. Height of *a*, 8"; of *b*, 7".

c, d, e, Vases or food bowls, finished in "fours," patterns of raised concentric parallelograms. From Morris and Upshur counties. Height of *c*, 6 1/2", of *e*, 8".

copper. Copper was found in only one other place, but the two cases prove influence from the far North, as there was no known copper in the nearby regions pure enough to be workable by a people who knew not the art of smelting.

In the spring and summer of 1931 we worked out several sites comparable with the Russell in importance. The first of these was on the J. M. Riley farm, about twenty miles northeast of Gilmer in Upshur county. At this place we encountered eighteen burials, at depths ranging from 23 inches to 49 inches, and obtained 179 pottery vessels, two pipes, 94 arrowpoints, seven celts, and various less important artifacts. There was an average here of ten pieces of pottery to the burial, the largest figure for any site we have worked in the State. The general average for the region is from five to six.

The pottery from this place was exceptionally interesting. Two specimens were of feather-weight type, a bottle and a bowl (see Pl. 23, figs *a* and *b*). On the bottle were designs of a conventionalized bird. The bowl, which was perfectly symmetrical, had beautiful scroll designs carved into relief, and on each of opposite sides were four holes placed symmetrically, indicating suspension by thongs. Feather-weight pieces were found also in other regions of the Sulphur river valley. All were done in exquisitely finished designs and were conspicuous for their symmetry. They must have been for ceremonial purposes, as they were much too delicate for common uses. One small effigy bowl found here has the form of a bird sitting on the nest. This type of "bird bowl" has been found repeatedly over the whole East Texas region.

At the H. R. Taylor farm in northwest Harrison county, about twenty miles northwest of Marshall, we explored the richest single burial place that we have investigated to date. Several of our records were broken at this site; viz., those for pottery from one site, 528 pieces; of pottery from one burial, 26 pieces; of artifacts from one burial, 71; our largest cooking-pot, 7 gallons; and the largest number of arrowpoints from burials in one site, 269. We were able to recognize 64 burials at this place and got an average of 8 to 9 pieces of pottery from each burial.

The skeletal materials at this place were in different stages of decay, some, as at the Russell place, were so nearly gone as to be hardly discernible; while some, often intrusive into the older ones, were better preserved. All were certainly prehistoric. Depths of burials ranged from 17" to 56". Burials were prone on the back, with head to the east, and pottery was distributed around the whole body with the largest piece at the foot and the smaller pieces about the head. These observations apply to the Russell place as well, and at both places pottery—particularly pots and bowls—were sometimes stacked, the smaller inside the larger, indicating



a



b

a Fine red bowl, large as a modern porcelain hand basin, outer surface polished. It, with another much like it, came from a single burial, number 9, Sander's place, Red river, Lamar county. Extreme width, 17".

b, A typical multiple burial from the Sanders place, Lamar county.

Undoubtedly a large village population had inhabited this place at times through several centuries. Nearly all of the terrace is now under cultivation and very much valuable archaeological material has been destroyed by the plow.

We uncovered twenty-one distinct burials, containing at least sixty skeletons. One marked feature of this site was the multiple or group burial (Pl. 26, fig. *b*), in contrast to the single skeleton in one grave found universally in other parts of East Texas. Depths of interment ranged from 8" to 49". The shallow burials were usually single, while the deep ones contained from three to eight skeletons each. The bony materials of the deeper burials were often in fairly good condition; but nowhere at this site did we find evidences of white contacts. The tabulated returns run as follows:

Pottery vessels, 76, clay pipes, 7, stone pipes, 3 (the only ones found so far in East Texas), ear plugs, 2 (of stone covered with copper on one side); labret or ear plug of clay, 1; arrowpoints in burials, 36, on surface, 156, diminutive stone scrapers, 122 (on surface, the type is also found in the mid-coast region), miscellaneous stone artifacts, 60, shell gorgets, 20, shell hair ornaments, 16; conch shells, whole or slightly cut and shaped to special ends, 8, celts and axes, 19, bone implements, 96, clay discs and tubes, 14, and, finally, shell beads about 6000.

Most of the beads were made from the conch shell and were of three types, involving differences in size and form. A few were fossil olivia shells of a species found only in Texas in a region several hundred miles to the southeast in the direction of the coast from which the abundant conch shell material of this site had to come. There were 22 fine, neatly drilled pearl beads in a necklace on a male skeleton in a single skeleton burial. About the arms and wrists, and below the knees of this skeleton were beads numbering about 2,500. They were in strings or bands or were sewn upon the clothing. One clay bead was found and one large pearl bead in another burial. One string of beads was composed of the fine seeds of the lithosperm. This type of bead was found numerous also in burials in the caves and rock shelters of the Edwards plateau, forty to seventy-five miles west of Waco.

The gorgets were all of conch shell and several of them had very intricate and delicately carved designs. One has a profile Indian face carved in high relief, and done so well as to imply an attempt at portraiture. Most of the gorgets have figures of an equal-armed cross surrounded by a circle from which go out radiant lines. These features are often combined with other ornamental features in very complicated designs. One has the figure of a gorgeous strutting turkey cock (Pl. 25, fig. *b*), another has numerous human faces with head ornament and peculiarly shaped mouth highly suggestive of faces from various specimens of Maya art.

Post holes were found marking the sites of ancient earth lodges. Where these were completely traced out, they were all found to have only three walls; the fourth, usually to the south but in one case to the west, had been left off and the whole space used as a door. This must have been covered with skins in the winter. These holes were $2\frac{1}{2}$ " to 3" in diameter, 9" to 23" deep and usually 9" to 13" apart. Occasionally they were as much as 24" apart. The lodges varied from 8' by 10' to 10' by 12' in size, and were fairly rectangular in form. The fire pit was in the middle and at different levels, indicating a building up of the mound site through long continued occupation. Floors of these lodges were noted at depths of 24", 38", 64" and 120" below the top of a rounded prominence of this site, called by Mr. Jackson a domiciliary mound.

There is so little difference in the archaeological materials throughout this large accumulation of village refuse as to indicate the same type of culture throughout. Ornamentation on shards is noticeably simpler and cruder at the bottom.

There was enough evidence of death by violence in the multiple burials to suggest rather strongly sacrificial human killings. In burial number 7, two skulls were detached and buried at some distance from their torsos. In burial number 20, one skeleton was badly scattered and in burial number 12 one head of the five had almost surely been laid open by an axe before burial. In nearly all, if not all, group burials the topmost skeleton was of a large man and was adorned with more beads and gorgets and accompanied with more and finer pottery than the others.

The pottery at this place had less in common with pottery of the region generally than that of any other place. The forms and ornamental designs were so different from those further east as to imply a rather sharply differentiated culture. This supposition is also borne out by the heavy emphasis on shell beads, group burials, gorgets, and shell ornaments for the hair, the infrequency of arrowheads in burials and the total absence of the small triangular points. The flint chipping here was much cruder than that further east.

Group burials contained skeletons of men, women, and children and have the appearance of being family groups, and all of the skeletons of most groups seem to have been buried at the same time. This fact is suggestive of death from a plague which carried off whole families; or, as suggested above, of human sacrifices.

The number *three* figures heavily in the form and ornamentation of pottery at the Sanders farm. One very beautiful compound bottle of blood-red color, found with the big man of burial number 12 (Pl. 24, fig. *b*), had three

compartments brought together in a common neck and mouth. The bottoms were separated and supported by earthen bars or braces. The symmetry of this piece is perfect.

Two very fine large bowls of the size and general form of the large porcelain hand bowls formerly common in our hotels and homes were found in burial number 9 (Pl. 26, fig. *a*). These have perfect symmetry, were polished on the outside and were thick and strong. They are among the choicest specimens of the potter's art that we have found.

The pure kitchen deposits were as much as four and a half feet deep and were most concentrated in a lower portion of the terrace edge between the two low mounds where the house foundations were found. Numerous burials were found in the more eastern of these mounds.

Ashes were often associated with burials at the Sanders place; indeed, burials could often be located in the fields by the discoloration of the red soil from this cause. As there is no evidence of charred bones, these ashes are hard to explain. They were often at the bottom of the graves in a layer from one to two inches thick. There is not enough evidence of hardening in the clay banks of the graves to indicate that extensive fires were kept up in the graves before burial long enough to produce so much ashes. It would seem that the ashes were either placed in the graves cold or that fires had been kept burning for a long time just above the bodies in shallow burials.

One case of cremation was discovered, but that was at the R. L. Jagers farm in Franklin county, about seventy-five miles southeast of the Sanders farm. This cremation burial was of human bones that had been nearly completely destroyed by fire and then placed in a small heap about twelve inches across near the middle of a normal grave. Pottery and stone artifacts were placed about the pile of charred bones as in regular burials.

One burial at the J. M. Riley farm was of a normal skeleton prone on the back and with a heap of bone charcoal at a distance of some fifteen inches from the right knee. The bones in this instance were too nearly destroyed for their character to be determined.

The Sanders place may be the site of a large Shawnee village existing on the Red river to the west of the Caddo settlements in historical times. This village represented a wave of wandering Shawnee accepted as allies by the Caddo, who placed them west of their own settlements as a buffer against Comanche raids. Many features of this site affiliate it very closely with southern Ohio, such as the great abundance of shell beads, the shell gorgets, the pearl beads, the extensive use of conch shell, and the presence of copper.¹

¹ Returns from the field work of the present summer, 1932, and comparisons with materials from sites to the East have forced the writer to the conclusion that the East Texas field is

We found a conspicuous number of hoes made of the scapula of the bison at the Sanders place. Some of these were in burials and seemed to have served in digging graves, but most of them were in the kitchen deposits. They give pronounced evidence of extensive and intensive agriculture at this place. Hoes in the other sites were generally of other materials, such as stone and mussel shells.

Special features of various smaller sites must be mentioned to round out this account and give it its logical implications.

In several of the smaller sites we found a species of olla or jar that was important. They were always relatively large, from one and half to two gallons in content and of perfect symmetry, the body being almost perfectly spherical, with low neck and a mouth large enough to admit the hand. They were invariably of very strong materials and this fact together with their spherical form prevented them from being crushed by the weight of the incumbent earth, as was the case in probably 75 per cent of the other forms of pottery. They were often beautifully ornamented in both appliqué and incised designs and had always been given great care and attention in the making. They had probably served as containers for seeds and fats, but doubtless served at times as water jars. Two elongated egg-shaped specimens from the Sanders place, with a capacity of about 1½ gallons each, had no necks, and holes near the rim implied that heavy thongs or straps had been attached. They were probably for carrying water long distances.

The ornamental designs on pottery throughout the region as a whole were done in so many ways, involved so many themes and elements, and were applied so variously to different portions of the surface as to require a large book to describe them adequately. One conspicuous feature as compared with the farther Southwest, Peru and the southern portions of North America, is the total absence of designs done in paint, which was used only to cover the whole surface in the form of a slip or to fill incised lines and make them stand out. There is only a single exception to this statement in all of our two thousand specimens, a bottle of notably beautiful design, from the T. M. Sanders place, which has faint figures in a dark red paint on a slip of lighter red.

more highly unified than he supposed when he wrote the above article. We are finding common unifying elements between the Sanders site on Red river and sites further east, also many elements that are common to the East Texas field and the Muskogean area to the east of the Mississippi. The Shawnee village site mentioned above was probably 40 miles east of the Sanders place. The Sanders site is now highly suggestive of Natchez influence, especially are the multiple burials with their implications of human sacrifices indicative of such influence. (See Swanton *The Natchez*, BAE--B 43.)

Incised lines made either before or after firing constitute the commonest form of decoration. When made after firing they were hard to control, and the results are often crude. Carving doubtless developed from incision. It brought out designs in relief and was always done on pottery already burnt. This technique was frequently exemplified on the Sulphur river and probably the most beautiful ornamentation on Texas pottery is to be found in designs done in this way. This method produced the "Caddo carved pottery," which may have been Caddo or not; that is yet to be determined.

Incision was usually done with some sharp pointed instrument, probably a flint sliver set in the end of a stick, but lines of nail marks occur, and sometimes the surface of the soft clay was pitted with the end of a sharp stick.

Raised effects constitute the third method of putting designs on pottery and were made by applying rolls of soft clay to the surface of the unburnt vessels, or round pellets of soft clay to form rounded nodes, put on in lines or over the whole surface. Raised lines were often treated by cutting, gouging, or otherwise reshaping the top line or middle of the roll. Raised straight lines sometimes cover a whole pot, laid on in vertical position, or they may be used to cut the surface into segments. Sometimes they were interrupted with nodes. Raised lines were also placed on pottery in all forms of complicated curved designs. Some very striking and beautiful effects were obtained in this way.

Designs are very numerous and widely varied. Scrolls in many forms are found. Sometimes the curved ends take on the form of sharp angles. Sometimes the scrolls are single, sometimes compounded and interwoven, sometimes they are in incised lines, sometimes in relief. Spiral lines are often employed in single, double, treble, and sometimes even quadruple spirals. Often a spiral line will pass as a base line from one figure to another. Often opposed or balanced hooks or spirals are found. In one case fine parallel curved lines are used to make a complicated design very suggestive of a conventionalized human face. Frequently the lines are so exactly parallel as to suggest strongly that some comb-like device was used at least for laying out the design.

Often designs were so accurately placed, proportioned and worked out in the segments of a vessel as to force the conclusion that there had been very skillful preliminary sketching in charcoal or other erasable materials before carving, incision, or appliqué work began.

In some sections designs were worked out in *fours*; i.e., the surface was cut into exact quadrants, sometimes by vertical nodal lines put on in fours, the margin scalloped to form four lobes or tips, etc. On many of these vessels a four-armed cross inclosed in a circle forms the heart of some large

spiral design which fills a quadrant. In one case a tubular cross, the ends of which opened on the surface on each of the four sides, thus cutting the bottle into two "stories," is placed in the middle of an elaborately decorated bottle (Pl. 24, fig. *a*). Sometimes pots are decorated in *twos*; at the Sanders place nearly all decoration on pottery was in *threes*, but the gorgets were done in *fours*. Sporadic cases of other numbers are found, but they are inconspicuous.

To the scroll, spiral, cross, circle and angle or broken straight line as the commoner elements of designs, we may add triangles, sometimes combined into complicated geometrical figures, striated and stippled patches, sun discs, concentric circles, arrowpoints, ears (conventionalized), ear-like tips on margins, tubular ears on the side of the vessel paralleling the rim, scalloped and notched edges, and mammary-like and nipple-like protuberances, all of which are found occasionally. Some of these, as the concentric circles, are found frequently in certain areas. Beautifully done arrowpoint designs are incised, or rather carved, into the surface of one fine bowl.

Birds, flowers, leaves, insects and animal figures in surface designs are wholly absent, except for one vaguely bird-like figure on a bottle and a single vine-like design on a bowl.

Effigies of animals are found in miniature. Two animal effigies on platforms going out from the rim of bowls constitute handles, opposed in each case by a curiously notched vertically placed handle on the opposite side from the effigy. One of these figures is that of a dog, the other probably that of a squirrel. Both are rather crude in finish but both have good life-like poses. These came from sites near Frankston, Anderson county. All effigy bowls have three heavy, roughly incised parallel lines just below the margin.

One rather good figure of a baby on a cradle board constitutes a smoothing or polishing tool, used doubtless in making pottery. It came from the Red river.

Tempering was done in many ways. Ground shell, ground shard, coarse sharp sand, and ground-up charcoal and lignite were all used. At some sites pottery was tempered only in one way, elsewhere various methods were used. Coarse particles of shell and of charcoal were sometimes employed for the sake of the appearance on the surface. At one place near Frankston, Anderson county, the pottery was all made from a clay bank containing a particularly fine white clay in which was a thin stratum of lignite which had sometimes been used in tempering. At this place there was so much shard as to suggest a factory.

Much of the pottery is of poor clay, indicating that some of the potters

took what happened to be at hand instead of seeking widely for the best. The red clays so prevalent in this region invariably contain iron, a source of weakness. When very abundant it was often carried away in solution after the burial of the pots, which reduced the remainder of the material to a condition little better than dirt. This was rather frequent on the Red river, hence pottery there was sometimes so frail that a spade might cut through it without the workman's noticing it until he had thrown it on the dump. Such pottery when got out whole had to be treated for strenghtening before removal from the earth.

Vessels with wide open tops and sitting upright were usually cracked by the weight of the earth above and more often than not were thus broken into small fragments. Frequently before final collapse one margin along a crack would be pressed far out of the line of general contour of the original vessel, and this distortion frequently caused serious trouble in reconstruction in the laboratory. We finally learned to force them back into the original form, after completely assembling all pieces except for a gaping crack whose edges would not fit together: we placed strong rubber bands around the outside in slowly increased numbers and used thrusts against the inner margin to hold it in place while the distorted outside margin was brought back into place. We were thus able to undo nature's distortive effects reversing the direction of the pressure while giving the pottery time to reset under the pull of the rubber bands.

One very odd situation was encountered on the A. C. Sanders farm, two and a half miles east of Frankston, Anderson county. On being trenched, a low, circular mound about seven feet in height above the surface of the surrounding field and one hundred feet across was found to consist of about eighteen inches of sandy loam soil on the surface, probably accumulated wind drift, three and a half feet of pure ashes, and two feet of native soil, probably the original soil, at the bottom. This vast accumulation of ashes was so free from bones, charcoal and other kitchen refuse as to force the conclusion that the ashes had been gathered or accumulated there simply as ashes and that they must have some very special significance. Father Morfi, a Spanish missionary located for a good many years at the Spanish Mission at Nacogdoches, describes a practice of the Assanai tribes that may explain this ash heap. According to his *Memorias*,² these tribes kept a sacred fire of logs perpetually burning in the "fire temple," the largest earth lodge of a village; the pure ashes of this fire were piled in a sharply conical mound near the temple and kept free from contaminating elements; and the heads of

² MS. of Fred Chebot's translation, soon to be published.

slain enemies captured in battle were buried in this sacred mound. The writer found a mound about 8 feet high by 16 feet across at the base in a farmyard three miles east of Old Boston, Bowie county, that corresponds exactly to Morfi's description. The landowner did not permit excavation, but a pit sunk into the top to serve as a hothouse enabled one to see its interior. The Frankston ash mound contains many times the ashes of the Old Boston mound, and they had been scattered over the earth in a low flat mound utterly at variance with Morfi's account. We hope later to completely excavate this ash mound in order to solve the riddle.

Large mounds of various form and size are found in many parts of East Texas, and the University of Texas has permission to explore several of them. Some of these had been trenched by amateurs or removed for buildings or roadways and have been found to contain skeletons and pottery. Lack of adequate funds has prevented us from attempting to explore any of the larger ones as yet, but we hope to attempt some of the more promising soon.

Nowhere in East Texas have we found stratified remains that give any clue of succeeding culture periods. There are discernible differences in the artifacts coming from the older burials as compared with later ones, but on the whole there is remarkable homogeneity in the culture revealed. Much of the most beautiful pottery comes from the old graves, as does also much of the finest stone chipping. The two finest blades found, each a beautiful symmetrical double-pointed piece about fourteen inches long, came from a burial with only the barest traces of bones left. Everywhere were unmistakable evidences of the bow and arrow. The highly prevalent small points of the old graves could have been nothing but arrowpoints.

In Central Texas, on the other hand, the deep and old burnt rock kitchen-middens contain much positive evidence of stratification. Only the upper eighteen inches or so of middens seven feet deep contain the unmistakable small arrowpoints. Below that depth all projectile points are so heavy and have tangs so broad as to make it quite improbable that they were ever used with the bow. Doubtless the atlatl stage will yet be discovered in East Texas, but it will be hard to isolate because the spear everywhere continued to be used after the coming of the bow.

The upper level of the Central Texas middens has so many features in common with those of the East Texas burials described above as to make it fairly certain that the last culture of Central Texas came from the forested regions of the East. The tiny arrowpoints of this upper level are associated with the very few and only specimens of shard that are found in Central Texas, also with the rare specimens of polished stone and mullers in such

numbers as to imply highly accentuated agriculture. In Central Texas the East Texas arts were modified to harmonize with the type of life forced by the geography of the former region. Pottery making was given up or never attempted and the settled village life moved in the direction of a nomad hunter culture.

The relations of the archaeological remains of East Texas to the historical tribes will become clearer with the discovery of (1) more materials carrying evidence of white contacts; and (2) with the publication of the ethnological data of the early Texas tribes now locked up in old Spanish records.

We hope at the University of Texas to play an honorable part not only in gathering, preserving and interpreting the rich archaeological materials of our vast pivotal state, but in filling out the great ethnological lacuna for which the name of Texas now so notoriously stands. What we need to accomplish these two great tasks is money. That we need badly if we are to work fast enough to outstrip the destruction now going on in both fields, but particularly in the archaeological. The prevalent depression has set tenant farmers, commercial pot hunters, and even unemployed geologists from the closed-down oil fields to digging into and destroying our precious records of the past. This is going on in a way and to an extent that is heart-breaking to any *bona fide* archaeologist.

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NORTHERN SAHAPTIN KINSHIP TERMS *By MELVILLE JACOBS*

IN THE course of linguistic and text recording in several northern Sahaptin dialects, from 1926 to 1930, a considerable portion of the kinship terminology of the northern Sahaptin tribes was obtained. In future field researches additional terms will be found with ease, but it is not inadvisable to render available at this time the fairly full set of terms and forms obtainable from our notes. Except where other provenience is indicated, the material is originally from the upper Cowlitz river (ta'idnapam band) Sahaptin of western Washington. It was recorded (1927) after securing some familiarity with the relatives or names of the relatives of the ta'idnapam interpreter, Sam N. Eyley, and was elicited largely by asking him how he or a certain relative of his, known to me, called some other person, also known to me; only a few terms were given as translations of English terms. The adjacent Klikitat (xwa'lxwaipam) terminology is almost identical. There seem to be very few variant roots employed from dialect to dialect in western or central Washington Sahaptin. In 1930, using the original list of ta'idnapam terms, and a direct translation method, some variant roots and terms were recorded in the Palus (palu's) band dialect of south-eastern Washington: these are noted below in each case, they are probably valid for at least the Wallawalla (walu'la) band as well. The next steps in field recording are to secure full lists of terms for the several Palus, Wallawalla, Umatilla, and Warmsprings bands, and to relate the terms to the tribal cultures in which they are employed.

In *A Sketch of Northern Sahaptin Grammar* (UW-PA 4) discussion is given of personal pronoun prefixes and suffixes found with the terms. The following affixes are the principal ones used; others that appear buried and non-functional are discussed in the grammatical sketch.

na-, first person singular possessive, occurring always with suffixed -as, and used when the subject of the term is an older and perhaps more or less respected person.

in-, first person singular possessive, used when the subject of the term is a younger person, or an in-law, husband, wife, or friend.

ə- (and irregularly, a- and i-), second person singular possessive, used like na- above for older persons.

im-, second person singular possessive, used like in- above for younger persons, or in-laws, husband, wife or friend.

p- (and irregularly, pə-, pa-, pi-), third person singular prefix, somewhat fossilized.

-a (and irregularly, -ə and -i), vocative.

All recorded terms follow.

1. *pci'd*, father; *adwa'ipcit*, the deceased father; *natu'tas*, my father; *otu'D*, your father; *tu'ta!*, father! *tu'ta*, *tə'ta!* (Palus), father! *tuta''!*, dear dear father! (in affection or when wailing).

2. *ptca'*, mother; *na'i'las*, my . . . ;¹ *adwa'ina'i'las*, my deceased mother; *i'l*, your . . . ; *i'la!*, mother! *ila''!*, dear dear mother!

3. *i'ct*, son; *i'nmict*, my . . . ; *imi'ct*, your . . . ; *ictaBmi'*, of or belonging to his son; *i'ctapa*, to his son; *tə'ta!*, son!

4. *pə'B*, daughter; *i'npəB*, 'my . . . ; *i'mpəB*, your . . . ; *i'nkwəṭən*, my daughter (spoken by a female); *ə'ca!*, daughter!

5. *pa'D*, elder sister or elder female cousin; *nana'nas*, my . . . ; *ənə'c*, your . . . ; *na'na!*, elder sister! *nana''!*, dear elder sister!

6. *piya'B*, elder brother or elder male cousin; *naya'yas*, my . . . ; *ya'c*, *yaca'B*, your . . . ; *ya'ya!*, vocative.

7. *əsxə'p*, male's younger brother or younger male cousin; *i'nkaks*, my . . . ; *əku'ks*, your . . . ; *nə'ka!*, vocative; *na'ka* (same, yelled).

8. *əsi'p*, female's younger sister or younger female cousin; *i'naks*, my . . . ; *yu'ks*, your . . . ; *ni'ya!*, vocative; *niya''!*, . . . ! (same, with emphasis or endearment, or when wailing).

9. *a'ts*, male's younger sister or younger female cousin; *i'ntsats*, my . . . ; *tsni'ts*, your . . . ; *nə'tca!*, vocative.

10. *pa'tct*, female's younger brother or younger male cousin; *i'npats*, my . . . ; *pa'ts*, your . . . ; *nə'pa!*, vocative; *ləpa''!* (same, wailing, endearment).

11. *ti'la*, male's daughter's child; mother's father; *nati'las*, my mother's father; *i'ntila*, my daughter's child (male speaking); *əti'l*, your mother's father; *adwa'i'ətil*, your deceased mother's father; *tu'tilam*, your grandfather; *i'mtila*, your daughter's child (male spoken to); *i'msila*, same, used in a *ta'idnapam* myth; *nasi'las* (Palus), my mother's mother's brother; *ti'la* daughter's child! mother's father!

12. *a'la*, father's mother; *pta'x*, female's son's child; *na'a'las*, my father's mother, *i'n'ala*, my son's daughter; *i'nptax*, my son's son; *a'l*, your father's mother; *i'mptax*, your son's child (spoken to a female); *a'la!*, father's mother! son's child!

13. *pu'ca*, father's father; *pəxənə'c*, male's son's child; *napu'sas*, my father's father; *napu'cac* (Palus), my father's father; *i'npəxənəc*, my son's child (male speaking); *əpu'c*, your father's father; *i'mpəxənəc*, your son's

¹ Dots stand for the kinship term, whose translation is not repeated; only the appropriate possessive personal pronoun is supplied in translation.

child (male spoken to); pu'ca!, father's father' pu'sa!, son's child! (male calling).

14. ka'la, mother's mother; pxa'x, female's daughter's child; naka't-as, my mother's mother; i'nkala, my daughter's child (female speaking); aka't, aka't, your mother's mother; i'mpaxa, your daughter's child, ka'la! daughter's child! mother's mother!

15. pi'max, father's brother; namaxas, my . . . , amax, your . . . , m'xo!, vocative; m'xa (same, Palus).

16. paxax, mother's sister; naxaxas, my . . . ; axax, your . . . ; xa'xa!, vocative.

17. nasi'las (Palus), my mother's mother's brother; si'la! (Palus), sister's daughter's son!; mother's mother's brother!; sister's daughter!

18. pici'c, father's sister; nasi'sas, my . . . ; aci'c, your . . . ; ci'ca!, vocative.

19. nali'las (Palus), my father's half sister, my aunt.

20. pi'tax, mother's brother; naka'kas, my . . . ; nataxas (Palus), my . . . ; aka'k, your . . . , ka'ka!, vocative, t'ax (same, Palus).

21. pi'taxp, male's sister's child, i'npitaxp, my . . . (male speaking); i'mpitaxp, your . . . (male spoken to); pi'ti!, vocative (male calling).

22. paxiya'x, male's brother's child, male's wife's child by a former husband (male's step-child); i'npaxiya, my . . . (male speaking); i'mpaxiya, your . . . ; pa'ya!, vocative.

23. pu't, female's brother's daughter; i'npu'd, my . . . , i'mpu'd, your . . . ; pa'wai!, vocative.

24. pamt, female's brother's son; i'npamt, my . . . ; i'mpamt, your . . . ; p'mta!, vocative.

25. psi'ts, female's sister's daughter; i'npsits, my . . . ; i'mpsits, your . . . ; pi'si!, vocative.

26. i'tak, female's sister's son; i'nmitak, my . . . , i'mitak, your . . . , i'ti!, vocative.

27. m'ma! (Palus), sister's son!

28. pnuk, male's sister-in-law, female's brother-in-law, and the same, vocative; i'npnuk, my . . . ; i'mpnuk, your . . .

29. miyu', male's brother-in-law, i'nmawit'al, my . . . , i'nskai (Kli-kitat), my . . . ; i'mawit'al, your . . . ; awit'al!, vocative.

30. a'tc, female's sister-in-law, i'nmatc, my . . . , i'matc, your . . . ; a'tc!, vocative.

31. pca'c, father-in-law; male's son-in-law; i'npcac, my . . . ; i'mpcac, your . . . ; pca'c!, vocative.

32. pna'tc, female's parent-in-law; daughter-in-law, i'npnatc, my . . . ; i'mpnatc, your . . . ; pna'tc', vocative.

33. cəwa'x, female's son-in-law, male's mother-in-law, i'ncəwaḡ, my . . . ; i'mcəwaḡ, your . . . ; cəwa'x', vocative.

34. pi'wunac, pi'nuwac, distant cousin, distant relation.

35. awi'd, in-law of opposite sex after decease of kin intermediary; inmawi'd, my . . . ; imawi'd, your . . .

36. awi'tas, male's brother's or uncle's or cousin's wife; the same, vocative.

37. k'u'li, "your honor," "master," "boss" (spoken to a deceased child); adwa'i'ink'uli, my deceased child.

38. t'łə'ks, friend, sister (female to female).

39. ɣa'i, friend, brother (male to male).

40. a'm, husband; i'nmam, my . . . ; i'mam, your . . .

41. a'cam, wife; i'nmacam, my . . . ; ima'cam, your . . .

The probable root forms of the above terms are as follows.

(p)ci, father; p may be third person prefix.

tut, tət, father.

(p)tea, mother; p, another likely third person prefix.

ił, mother.

ict, son, t may be secondary, compare əc, daughter.

tət, son; compare tut, father.

pəp, daughter; initial p may be integral, not third person prefix.

əc, daughter; compare ict, son.

kwtən, daughter of a female.

pat, at, elder sister or elder female cousin; p is also possibly not third person prefix.

na, elder sister or elder female cousin.

ya, elder brother or elder male cousin.

sxəp, younger brother or younger male cousin, p may be secondary, leaving hypothetically basic sɣ.

kaks, kuks, ka, k, younger brother or younger male cousin, compare the younger female siblings below, for possible cognates: aks and uks, ka or k may be primary, ks secondary.

sip, younger sister or younger female cousin; as in sxəp, p may be secondary.

aks, uks, younger sister or younger female cousin; ks may be basic, compare kuks and kaks above.

(n)i(ya), younger sister or younger female cousin; possibly n is first person; the root form is obscure.

(a)ts, younger sister or younger female cousin: see tca and tct; ts seems basic in ats, tsnits, nətca, patct, and pats.

(nə)tca, younger sister or younger female cousin; the shift, ts to tc, is very likely an ancient augmentative-diminutive nuance; n or nə is another first person element now buried.

(pa)tct, (pa)ts, younger brother or younger male cousin; see above, nə-tca; pa or p is third person; final t is probably secondary.

(nə)p, younger brother or younger male cousin; note the buried n or nə, first person.

til, man's daughter's child; mother's father.

sil, same, in ta'ḡnapam myth; a cognate of til; in Palus, mother's mother's brother, sister's daughter's son, sister's daughter.

al, father's mother.

(p)taḡ, woman's son's child; p is probably third person.

puc, pus, father's father, man's son's child; puc is used for the grandparent, pus for the grandchild.

(pə)ḡnəc, man's son's child; p or pə is third person.

kaḡ, kəḡ, mother's mother, woman's daughter's child.

(p)ḡaḡ, woman's daughter's child; p is third person.

məḡ, father's brother.

ḡəḡ, ḡaḡ, mother's sister.

cic, sis, father's sister.

liḡ (Palus), father's half sister or aunt.

kak, mother's brother.

təḡ, tḡ, mother's brother; see pit p.

məm (Palus), sister's son.

(pi)tḡ(p), man's sister's child; initial pi or p may be third person; final p is possibly secondary.

pit, t, man's sister's child; possibly a cognate of pitḡp.

(pa)ḡiyaḡ, man's brother's child; pa or p seems third person.

pay(a), man's brother's child; perhaps a cognate of paḡiyaḡ; the root is obscure.

(p)u't, woman's brother's daughter; p may be third person, or t secondary.

pa'wai, woman's brother's daughter; seemingly a cognate of pu't; the root is obscure; awa may be the original form of u'.

(pə)mt, woman's brother's son; p or pə may be third person.

(p)sits, si, s, woman's sister's daughter; p seems third person; compare pcit above; ts may be secondary; the basic form may be s.

it(k), woman's sister's son.

(p)nuk, man's sister-in-law, woman's brother-in-law; p may be third person.

skai' (Klikitat), man's brother-in-law.

miyu, man's brother-in-law.

awit'(a), man's brother-in-law; probably awit', 'a being secondary; awi't, in-law of opposite sex after decease of kin intermediary; awit(as), male's brother's or uncle's or cousin's wife; awit is again primary.

atc, woman's sister-in-law; possibly historically related to ts forms for younger sibling, above.

(p)cac, man's father-in-law or son-in-law; p seems third person.

(p)nac, tc, woman's parent-in-law or daughter-in-law; p seems third person; tc may be primary—compare with atc and ts above.

cōwax, woman's son-in-law, mān's mother-in-law.

am, husband.

a'cam, wife; c may be a feminine element; other Sahaptin languages, especially Molale, should be compared for cognate female gender c; am may then be the root form.

(pi')wunac, (pi')nuwac, distant relation, cousin, pi or p may be third person.

xa'i, friend, brother, male to male.

t'lo'ks, friend, sister, female to female.

k'uli, deceased child; master, honored one.

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A RESEMBLANCE BETWEEN YUMAN AND PUEBLO SONGS

By FRANCES DENSMORE

AN IMPORTANT phase of any study is finding the norm of the material under observation. When this has been done, the variants can be described and put into groups which it is feasible to compare. We may even form hypotheses concerning the group differences and try to explain them.

By recording about 2,000 Indian songs and analyzing them according to a uniform system the writer has tried to find the norm of Indian singing. The amount of material is so large and the Indians have so long been in contact with the white race that any characteristic occurring in a majority of the songs under analysis may be somewhat removed from a primitive expression. Before considering a rhythmic phase of what appears to be the norm in available Indian songs we will, therefore, consider two phases of song that are particularly primitive. Only a limited amount of this class of material can be obtained at the present time. The more primitive of these phases is the melodic narrative, or "rudimentary song," studied among the northern Ute and found in some other tribes. A story is told in a long melody which suggests improvisation and has no rhythmic divisions. There is, however, a melodic and rhythmic idea which is carried forward, as the songs reflect the characteristics of the animals mentioned in the story.¹ Extended records of this class of material were transcribed. Another primitive form consists of a short melody interpolated in a spoken narrative. Such songs were recorded among Algonquian tribes as well as in southern Arizona and on the Northwest Coast. In Arizona they were sung four times, but among the primitive northwestern tribes the songs were sung only once, breaking the monotony of a long narrative by introducing a different rhythm. These songs were small in compass and, generally speaking, they lacked melodic interest. With the change of custom these songs, in many tribes, have become detached from the narrative and are used in a casual manner. Thus we find the songs of ancient legends sung for the amusement of children while the legend is briefly summarized or entirely forgotten. The inner meaning of the story is gone, and the little melody is adrift in a world that smiles at its simplicity.

Returning to our search for the norm of Indian songs, we note a phase of their rhythm. A cumulative analysis of 1,553 Indian songs shows that 64 percent contain a rhythmic unit. The songs analyzed singly and not yet included in the cumulative analysis contain the same characteristic. It ap-

¹ Frances Densmore. *Northern Ute Music*, BAC-B 75. 200-204, 1922

pears, therefore, that a rhythmic pattern is part of the norm of these Indian songs. If the pattern is short, it is designated as a rhythmic unit, and if long, it is called a rhythmic period, these terms being intended simply to assist the observation of the melody. As a simple parallel in our own music we may cite the structure of "America." In this melody, according to the terminology used by the writer, the rhythmic unit would be the little phrase occurring first with the words "'tis of thee," and the rhythmic period would be the first line and others with the same meter, the intervening lines being regarded as connective.

The material collected by the writer is chiefly from the following areas and tribes:

Northern woodland	Chippewa, Menominee
Plains	Sioux, Mandan, Hidatsa, Pawnee, Winnebago
High plateau	Northern Ute
Desert	Papago, Yuma, Cocopa, Yaqui
Northwest coast (at Neah bay, Washington)	Makah, Quileute, Clayoquot
Pueblo	Acoma, Isleta, Cochiti
British Columbian (at Chilliwack, B.C.)	Tsimshian, Nootka, and other tribes
Also the Seminole of southern Florida and the Tule (San Blas) Indians of Panama.	

The Pueblo songs were obtained from members of these tribes temporarily in a low altitude and the Tule songs were recorded in Washington, D.C.

A large majority of these songs contain a short rhythmic unit. Many forms of rhythmic structure occur in the songs of each tribe, but a sharp line of demarcation occurs between the San Blas, Yuman, and Pueblo songs on the one hand, as against the songs of Papago, Yaqui, and all other recorded tribes. This difference overshadows other differences which would enter into a detailed analysis of the two groups, such as the pause of indefinite length which occurs between the periods of certain Yuman and Yaqui songs, or the change of pitch gradually higher or lower, which occurs in many Pueblo records. The writer may be permitted to say this large difference came as a surprise during the progress of transcribing and analyzing songs, and that no explanation is advanced. The observation is presented as it developed in the course of work.

Prior to the recording of Yuman songs (1922) the rhythmic periods in recorded songs of all tribes were of approximately the same length, and it is safe to state that a majority of songs had a definite rhythmic form. The simplest of these forms were the following:

1. Four periods with the same rhythm (Bul. 53, no. 28; Bul. 61, no. 138; Bul. 75, no. 42).
2. Four periods with the same rhythm and an extension at the close (Bul. 75, no. 32; Bul. 80, no. 20).
3. Four periods, the first two and last two having the same rhythm (Bul. 75, no. 21; Bul. 90, no. 98).
4. Four periods with a change of rhythm in the third (Bul. 53, no. 39).
5. Five periods of equal length, with or without an extension at the close (Bul. 53, nos. 38 and 147; Bul. 80, no. 24).
6. A form with rhythmic completeness (not consisting of periods) which may or may not contain a rhythmic unit (Bul. 90, no. 109).

A form consisting of three short periods occurs occasionally and has been noted in songs associated with supernatural aid or beliefs connected with spirits (Bul. 53, no. 32).

These simple forms are frequently modified by the introduction of tones between the rhythmic periods or the use of phrases without definite rhythm. In many cases the note-values depend upon the number of syllables in the words of the song. There are many songs with rhythmic units but no large rhythms, either of periods or of the song itself. We are dealing with a large mass of primitive material, and it is impossible to make statements that include every song, but the outstanding facts are that the songs recorded before the Yuman were characterized by rhythmic units, and, when divisible into periods, these sections of the song were of approximately the same length.

On transcribing the Yuman songs the writer found them to consist of two or more distinct periods of very uneven length. In the songs previously studied the periods were generally about four to seven or eight measures long but it was found that the Yuman songs contained periods of about 50 measures. Moreover, the Indians were able to describe the form of the songs saying "near the end there is a short part that goes up higher." For example, in one Yuma song the first period contains 58 measures and the second 29 measures, followed by a return of the first period. In another the first period contains 20, the second 19, and the third 12 measures, followed by a return of the second and then the first period. In another the first and second periods contained 12 and the third period contained only six measures. Rhythmic units occur frequently throughout Yuma and Cocopa songs and their designation by a bracket was retained, the periods being marked with the letters A, B, C, and D, according to their number. Many Yuman songs are shorter than the foregoing but this is the typical form.

The presence of a group of Tule ("white") Indians in Washington af-

forded opportunity for a study of their music, nine songs being recorded. These have a compass of only three or four tones and are not thematic in character, though one song contains recurrent phrases. The "swing" of the rhythm is long and the transcriptions were extended, one containing about 200 measures. The words were improvised along accustomed lines and the melody was likewise varied by the singer, though certain characteristics were retained in every performance of a song. The Tule songs were without the definite form of the Yuma in which "the part near the end goes up higher," but in their long, swinging sequences of tone there is a resemblance to the Yuma songs that were used in treating the sick. Both the San Blas and the Yuma were distinctly different from songs formerly recorded, except as the San Blas songs bore a resemblance to the "rudimentary songs" of the Ute Indians.

The following verses are illustrative of the contrasting rhythms already described. They are not translations of Indian songs, neither are they in the exact rhythms of Indian songs, but they are similar in style.

*Rhythmic forms which characterize songs of Plains, Woodland,
and certain other tribes*

1. Four periods of equal length with an extension at the end:

A light in the midnight sky,
The moon in Pueblo land,
I watch the stars in their path
And the shadows that cross the silent mesa trail.

2. Four periods with a change of rhythm in the third period:

A light in the midnight sky,
The moon in Pueblo land.
And shining like snow in a northern clime
The waste of the desert sand.

3. Five periods of equal length:

A light in the midnight sky,
The moon in Pueblo land,
I wait for the red in the east
And watch the patient stars
As I tread the desert sand.

4. Rhythmic unity in the song as a whole:

The moonlight rests upon the desert sand and turns its yellow into glistening white like snow.

*Rhythmic form characterizing Yuman and Pueblo (Acoma, Isleta, and Cochiti) songs,
with recurring periods, the order of recurrence not being arbitrary*

- (1) The light on the mesa is clear and white, and the sand is shining like the snow in that strange country of which we have heard,

- (2) The moon is rising above the pueblo.
- (3) High in the sky a star!
- (2) The moon is shining over the village.
- (2) The moon is shining above the village.
- (1) The light on the mesa is clear and white, and the sand shines like the northern snow.
- (2) While the moon rises over the pueblo.

The following is a portion of the translation of a wedding song, recorded by a member of the Tule (San Blas) tribe. The translation follows the words of the interpreter as closely as possible and the result was approved by the Indians. In the translation are the long, flowing rhythms that characterize the songs, although the exact meter of the music is not found in the words.

Now we will have the wedding feast.
 The morning sun is halfway up the sky,
 Come! It is time for the wedding.
 The chief musician and his assistant are in their places,
 Four men trot across the room and blow smoke on the two musicians,
 Smoke from a great cigar of our tobacco, rolled one leaf upon another,
 Protecting those who will play the flute and rattle on your wedding day.²

After the foregoing paper was in type the writer recorded 200 songs among the Seminole Indians of Florida, finding examples of the form which was first noted among the Yuma. While the Seminole songs were being recorded a song of the Yuman pattern was noticed and the writer asked about the song. In reply the singer said it was "a song with a different place in the middle." Questioned further he said the song had three parts and that the first and third could be of any length while "the second part is short and always sung alike." This showed the Yuman pattern clearly, but the singer was not given to understand the importance of his information. On further questioning he said the Seminole have many such songs and that he could sing those or the shorter melodies as desired. They did not appear to belong to any particular class of songs, but he was singing only the old melodies. Numerous songs of this type were recorded and have been transcribed. The statement that the first and third sections (or periods) can be of any length refers to a "working over" of the phrases, with repetitions, changes in the order of the phrases and slight changes in note values, as well as the insertion of phrases having a different but unimportant rhythm. These occurred among 75 songs recorded by Panther (known as Josie Billie), a leader of the Big Cypress Swamp band of Seminole living in the Everglades. Billie Stuart, a member of the Cow Creek band of Seminole living near Lake Okeechobee recorded 117 Seminole songs, but this form was not observed during the recording. Neither is it found among the songs thus far transcribed. It

² Frances Densmore. Music of the Tule Indians of Panama, SI-MC 77: 23, 24, 1926

occurred, however, in one of eight songs recorded by Billie Stuart and attributed by him to Indians whom he called "Caloosa" and also "mountain men." He said these people had a village near a Seminole village and each tribe visited the other, joining the dances and learning songs, but later they fought and the Seminole severely defeated the other tribe, so that they disappeared.

This peculiar form may be seen by the following schedules of measures in Seminole songs.—

Bird dance: Introduction 2 measures, period A, 9 measures, B 4 measures.

Bird Dance song: Period A, 16 measures; B, 8 measures, followed by a repetition of A with slight changes, the song ending with period B unchanged.

Hunting Dance song: Period A, 13 measures, B, 3 measures, followed by the last half of A.

Hunting Dance song: Period A, 16 measures, B, 11 measures, followed by a repetition of period A

Corn Dance song, attributed to the Caloosa: Period A, 65 measures, B, 33 measures.

None of the songs recorded by Seminole contained more than two periods, the third section being a recurrence of the first.

A modified example of this form was recently found in a very old Winnebago song which was sung when a certain medicinal herb was dug. The schedule of this song is as follows: Period A, 12 measures; monotone connective phrase, 2 measures, period B, 5 measures, followed by a repetition of 9 measures of period A. The high pitch of period B and its change of rhythm identify the form, as well as the relative length of the periods. The lively character which appears in the second period of this form is represented by a faster tempo in the Winnebago song. On being asked whether Little Hill, the original owner of the song, ever travelled toward the south it was said that he "used to sing Iowa songs, from next to the Otoes." Other songs attributed to Little Hill do not show this form. In order to ascertain its frequency among Winnebago songs the writer examined about 200 of her transcriptions of songs from this tribe and found 5 modified examples among 17 songs of the peyote ceremony. The first period was not as long, relatively, as in the form noted first in Yuman songs and a rhythmic unit was more prominent, but this period was followed by a repetition of one tone and a short rest, after which a second and much shorter phrase was introduced, having an entirely different and more lively rhythm and being, with one exception, higher in compass, either in single tones or in its pitch-level. While these songs are used ceremonially by the Winnebago their origin is uncertain, as it was said that many peyote songs came from the Kiowa and Comanche. A resemblance to this form was found in two old Winnebago war songs, two songs concerning the recent war, one song of the Medicine Lodge, and one song used in treating the sick.

Mention may also be made of a resemblance between some of the Seminole Bird Dance songs and one or two of the Cocopa Bird Dance songs, recorded by Cocopa who were Mexican subjects but lived within the borders of Arizona. This consists in a change of rhythm too subtle for description. The "Yuma form" was not found in recorded Cocopa songs though the Cocopa are constantly associated with the

Yuma in their ceremonies. Neither did it occur in more than 200 songs recorded among the Papago whose territory adjoins that of the Yuma on the east.

From the writer's observation it appears that the norm of Indian songs is to be found in their rhythm, not in their melodic progression. A rhythmic unit occurs in a majority of the Indian songs under systematic analysis and it appears, from the foregoing, that a characteristic rhythmic pattern occurs in the songs of certain tribes. It also appears that this pattern, in a modified form, may have travelled far among other tribes. It is possible that the rhythmic pattern of songs may afford evidence of former contact between tribes that are widely separated at the present time.

RED WING, MINNESOTA

BOOK REVIEWS

METHODS AND PRINCIPLES

Ursprung der Menschheit. Über den engeren Anschluss des Menschengeschlechts an die Menschenaffen HANS WEINERT. (XII+380 pages, 122 figures in the text. Stuttgart: Ferdinand Enke, 1932.)

Weinert's *Menschen der Vorzeit* (see *American Anthropologist*, 1931, XXXIII (3), 443-444) has been followed in the current year by a more elaborate and more consummate volume from the same author's pen whose title appears at the head of this review. While the former book is a critical review of the palæolithic human fossils with perspectives into the ancestral and, on the other hand, more recent phases of Stone Age man, the present volume goes back broadly into the comparative anatomical and physico-anthropological fields, ending with chapters on *Homo sapiens*, fossil and recent. The volume is dedicated to the memory of Ernst Haeckel, whose personality still looms large in the domain of evolutionary history. A more appropriate homage could hardly have been paid a savant of Haeckel's stature than by this book, which as a summary of all the material data and those on phenomena in connection with the organic history of mankind, and above all as a critical representation of its chosen subject must be allotted a superior place in the by no means meager output of specific literature of the day.

The discussion of the anthropoid system with the inclusion of the fossils as the great phyletic complex from which to draw conclusions, fills the first extensive chapters. The close relationship of man and his anthropomorphic associates is proclaimed anew, an important and logical assertion in the face of a number of modern heretic views to the contrary. The detachment of *Hylobates* and *Orang-utan* from the more concentrated gorilla-chimpanzee-man group of primate association is shown by a number of morphologic evidences. The close relationship of man to the two African forms as seen in the existence there of the frontal sinuses which the Asiatic forms lack, an observation of the author's dating back to 1925, is only one of the many morphological proofs discussed. Other such proofs are recognized in the conditions of the interorbital breadth, *os centrale*, muscles, aortic arch, the lobes of the lungs, while the physiological serum diagnosis yields rather uniform results within the entire anthropomorphic group (pp. 178, 318, 323). The differentiations which occur in the gorilla-chimpanzee-man group culminating there in the well-known somatic and skeletal primate types in spite of their close relationship, are exhaustively treated in the fifth chapter. The critical review of the various stages of human emergence including the *Sinanthropus* recovery in its up-to-date entirety, the *Eoanthropus* problem and the Neandertal and *Homo sapiens fossilis* phases, leads to the discussion of the final splitting-up of mankind into the present racial array of types and to the renewed assertion of the unity of *Homo sapiens* stage. The possibility of a genetic relationship between the two representative morphological types of pleistocene man is not directly refuted (p. 261, et seq.; 284) while on the

other hand the development of chimpanzoid into Neandertaloid forms is stressed as an outstanding probability.

Of particular interest and value is the last chapter in which human emergence, its locality, time, causes, phylogeny, receive a conclusive summing-up.

America as to both of its continents, is to be eliminated with regard to human emergence (p. 333), man is the first catarrhine treading on American soil (p. 331).

The discussion of Asia and Africa as human cradle lands brings on another concept, namely the mid- and eastern European possibility, if judged by the chimpanzoid fossils with their closer affinity to man as against the Asiatic ones with their closer relationship with the orang-utan. This morphological conjecture is again stressed on p. 360, when in a final statement the author asserts:

There is today still one animal species which through the community of hereditary features connects with no other animal as it does with man. That is the African chimpanzee.

Chimpanzee and gorilla as they emerge from the anthropoid groups are indeed recognized as a stem group with a direct human trend of development, so that the author proposes for them, with the inclusion of man, the term "Euanthropoids" or "Summoprimates" (pp. 125, 199, 360). Clearly conceived are also the interdependent human functions after the acquisition of the upright gait as they reveal themselves in such sequences as: brain—hand—mouth, and fire—hearth—speech, which although well-known logicalities, receive new and enlightening interpretation.

A brief review naturally can give only a general presentation of the gist of a book. The profession will doubtless agree with the reviewer that we here have a work of the first order which will bring authentic information and uniformly sound critical interpretation. It contains a well-prepared table of contents as well as a satisfactory index, and is profusely illustrated.

BRUNO OETTEKING

Morphology of the African Bow-Weapon. LEO FROBENIUS. Translated from the German by BLANCHE LOMMEL. (42 pp., 26 charts by Ritter von Wilm, 288 text illustrations by E. Mannsfeld with the assistance of A. Schulz, bibl. Walter de Gruyter and Co., Berlin and Leipzig, 1932.)

Forty years of interest, intensive study, and close observation have produced this meticulous monograph. Professor Frobenius has practised what he preaches:

I believe that this treatise furnishes proof for the fact that accurate detailed investigation is much more valuable than theoretical arguments about the method to be used. The essential thing is to inquire thoroughly, seriously and accurately even into the seemingly unimportant minutiae, to weigh all potential qualities and to make use of all possible data.

In line with this, the author devotes his preface to "The imperfection of this treatise," but the treatise so far surpasses in quality the average study of similar type that one cannot but feel that the author is hypercritical of himself.

About forty double-columned quarto pages of fine type and containing 288 text figures are devoted to a discussion of the characteristics of African bows, arrows, and quivers and to their distribution. These pages are followed by 26 folded sheets of distribution maps. The maps all display drainage, which makes more intelligible the trait distributions. The cartography is excellent and will long remain an example worth following. Indeed, the whole monograph establishes a standard not likely to be surpassed.

E. W. GIFFORD

Systematic Sociology. LEOPOLD VON WIESE. Adapted and amplified by HOWARD BECKER. (xxi, 772 pp. New York: John Wiley & Sons, 1932.)

This work, a selective and amplified translation of the *Beziehungslehre* (1924) and the *Gebildelehre* (1929) of Leopold von Wiese presents the latter's conception of sociology as a special social science dealing with interhuman relations. The author follows a trend in sociology which is dominant in Germany and only slightly less so in the United States, but the system he elaborates seems to the reviewer to eclipse, in completeness and logical consistency, those of his forerunners and contemporaries. The work acquires importance, however, less for this reason directly than because it thereby succeeds in reducing to an absurdity the whole approach to sociology which it typifies and expounds.

Despite protestations to the contrary, it remains purely speculative and deductive. Conceived and couched in conceptual abstractions, it never comes to grips with reality. The object-matter itself is a terminological abstraction—"the total positive and negative process of sociation" (p. 14). "Sociation" is conceptually analyzed into: (1) processes of "association" and "dissociation"; (2) dynamic and static relations, i.e., processes and relationships or "*action* patterns" and "*action patterns*", and (3) "common-human" and "circumscribed" relations, i.e., those conceived to be, respectively, relatively uninfluenced and directly affected by the existence of social groupings. The methodological starting-point of the system is an admittedly (p. 94) philosophical concept of the "self." Mentally stripping the single human being of all his non-social traits, the author arrives at the concept of the "socius," who "is simply the spatial locus of sociation" (p. 23) or "a condensation or nexus of countless processes of sociation" (p. 84). Denying the validity of the terms "individual" and "society," he prefers to conceive of relationships of socii to one another as coalescing into "plurality patterns," which

are only condensations, by-products of social processes or *action* patterns, and exist only as neuropsychic patterns within human beings (p. 78).

The bulk of the work is divided into two parts: the systematics of action patterns and the systematics of plurality patterns. In the former it analyzes at length some twenty conceptual "processes": the "common-human" processes of association and dissociation; the "circumscribed" processes of differentiation, integration, destruction, and construction; and their respective subsidiary processes. The second

part similarly classifies and analyzes plurality patterns: crowds, groups (e.g., dyads, triads, etc.), and "abstract collectivities" such as the church and state.

Though susceptible to adverse comment on minor points, such as its pretentiousness and its incredible tediousness, the book exposes itself and the school it so perfectly typifies to criticism on at least two major points. In the first place, it confines itself entirely to modern European-American culture, and even condemns the recourse to ethnological data by such writers as Spencer, Vierkandt, Thurnwald, and Lévy-Bruhl as a "dangerous procedure" (p. 677). It should be self-evident that no genuine science of sociology can be constructed on data from a single culture area, any more than a science of biology could have been formulated from the study of *homo sapiens* alone. The Arunta and the Tlingit and the Hindu are as important to sociology as are the experimental rat and the fruit-fly to genetics. No universal generalization from a sociologist who neglects the rich and varied field of ethnography deserves the slightest consideration, and it is scarcely surprising to find our author, on his sole venture into the field of ethnology, uttering the following absurdity:

... the preliterate is not even emotionally aware of any antagonism between individual and social. He lives naïvely in and with his kinship group, and usually feels himself so bound up with his group, so 'organically' a part of it, that a feeling of independent personality has little or no opportunity to develop (p. 497)

An even more serious indictment of the book, as of others of its tribe, is its rejection of, and patronizing attitude toward, the inductive method. It reveals no slightest trace of anything except unverified armchair speculation, to which, of course, it gives the politer names of "functional analysis" (p. 252) and "envisagement of essentials" (p. 471). Indeed, it practically closes the door to scientific investigation with the statement:

Social phenomena . . . usually cannot be verified directly by our senses (p. 677).

In every science with which the reviewer is cognizant the worker builds upon the verified inductions of others, adding to them his own tested observations of the facts. Our author, however, with not more than five exceptions in 730 pages of text, cites no demographic studies, no historical sources, no facts at all unless we include superficial references to matters of common knowledge such as: "e.g., the Germanic migrations" (p. 322). He begs off with such statements as:

although the inductive observations substantiating the statement cannot be introduced because of space limitations, there is little doubt that . . . (p. 277).

In lieu of facts, he guesses, he cites other speculative writers, he reasons by analogy, e.g., comparing human beings to molecules (p. 26), to infusoria (p. 49), to onions (p. 100), to musical instruments (p. 521), to switchboards (p. 522); or he constructs hypothetical cases, e.g.:

A group of present-day men and women are shipwrecked on a previously uninhabited island. Let us suppose that . . . (p. 565).

In conclusion we can do no better than quote from p. 13.

Unhappily enough, mere "thinking" about social affairs without any attempt at verification has held sway, genuine knowledge has thereby been hindered rather than helped.

GEORGE PETER MURDOCK

Psycho-analysis of Primitive Cultural Types. GÉZA RÓHFIM (The International Journal of Psycho-analysis, pp. 1-224, Vol. XIII, January-April 1932).

Investigations of human adults show that their behavior consists of patterns derived from processes of conditioning in early childhood. Furthermore, some of these patterns are of such a nature that they may be called character traits. The most important factors conditioning an infant's behavior have been found to be the father and the mother. Thus there is interaction between the innate impulses of the child and the conscious and unconscious energies of the parents. In this way, the child is deprived of a series of satisfactions but the impulses remain and may, in later life, manifest themselves in ways which are by no means obvious. The human organism's responses to a life-long conditioning process can be arranged in categories and in open equilibrium equations. These responses can be demonstrated not only in conscious acts and attitudes, but also in dreams, and the rites and institutions of group life. The most comprehensive set of concepts dealing with these responses and innate impulses has been named psycho-analysis. These concepts need not concern those who are primarily interested in the essential work of recording what can be seen and heard, but they do concern those who are interested in the meanings and derivations of individual and group behavior, myths, tales, and institutions. Those who have investigated meanings unequipped with a knowledge of psycho-analysis have repeatedly become confused and have only extricated themselves by the use of relatively superficial assumptions. Psycho-analysis is a *fait accompli*, although like other fields it is undergoing continuous modification.

Dr. Roheim, in 1928-9, visited the Somali in Aden and Dzibouti; remnants of Luritja and "Aranda" tribes in Central Australia; the Melanesians of Normandy Island, and the North American Yuma Indians.

This review covers a series of fragmentary sketches, the first of which outlines certain advantages and difficulties which attend the application of his method in the field.

The next sketch is of unusual interest and contains his observations of a small group of Central Australian children at play with toys (a snake, monkey, goat, mirror, rubber water pistol, paper trumpet) which were new to them. With these toys the children re-enacted earlier experiences, elaborating them to fulfil their own wishes and demonstrating thereby their attitudes toward their parents. These children were relatively free from parental discipline and weaned themselves, when so inclined. Dr. Roheim found the children and adults did not possess certain types of anxiety, guilt, and need for punishment, which in white adults can be traced back to discipline patterns of weaning and sphincter deprivations. He found the children

limited to two games centering about coition and conception; and his observations subsequently called forth the following statement (p. 97):

To make assurance doubly sure I have seen the children of these western tribes enacting the whole process of coitus, conception and childbirth. There was certainly no sexual ignorance in their case. We must not forget that the whole doctrine is esoteric and cannot even be properly revealed before initiation, i.e. before they are officially acquainted with the existence of *churungas*. After initiation the majority really believe that something else is needed besides coitus to ensure conception—that is, repression has set in but not gone very far.

In his search for the meaning of ceremonial actions, Dr. Roheim found again and again that the underlying myths were explicit. Thus (p. 96):

But the old men know that the first *churunga* was Malpunga's penis, and old Yuramba told me a legend in which the sacred cave (*urkuanuwa*) is actually the vagina.

Dr. Roheim noticed that the children believed in cannibalistic demons and that these demons represented a phase of the parents, and obviously caused anxiety in the children. He did not, however, find it necessary to resort to free associations in order to demonstrate a justification for this anxiety because occasionally a child was in reality eaten by parents and brothers and sisters.

In his chapter on "Sexual Life in Central Australia," Dr. Roheim proceeds to outline the native standards of beauty, the methods of obtaining or marrying a woman; *modus cocundi* including antecedent behavior; hypothetical and actual kinship regulations of marriage, polygamy with episodes of cruelty and jealousy and the group's reaction, certain anxieties in the male underlying his aggressive sexuality; the strong influence of the mother upon the child, which is discussed in relation to the patriarchal structure of society, homo-sexuality and onanism as institutions, and beliefs concerning impregnation and conception. His information is supplemented by a psycho-analytical interpretation of five dreams, two phantasies and a folktale. Four of the dreams are what he calls typical conception dreams of the women. The child gets his totem from the locality where his mother first becomes aware of her pregnancy, and this event is usually accompanied by a dream where a man resembling the woman's father appears and either chases her or somehow enters her. Whereupon, Dr. Roheim states (p. 45):

If a man "chases" or "frightens" a woman in Central Australia, this can only mean one thing, that he wishes to have intercourse with her. The totem of an Aranda or a Luritja is determined by a thinly-veiled incest dream of his mother's. How after this anthropologists will be able to go on denying that the Oedipus complex is the latent content of totemism, I should really like to know.

This quotation is cited as one of Roheim's typical overstatements of fact. We find (p. 53):

For instance, the husband may be carrying his own *churunga* from Tmanda in his bag and the feather may get into the wife at Latika. In this case the *totem* would be determined by the Tmanda *churunga*, so that father and son would have the same totem.

And p. 65:

When a man returns home from a *wamula* ceremony, my Luritja informants told me, he will have intercourse with his wife in the camp and the *wamula* (down) will fly from his body into the woman. Thus a child is conceived, and the child's totem is determined in this case not by locality but by the ceremony which preceded coitus.

Here we have a conclusion stated in no uncertain terms and considerably modified on subsequent pages. This is a habit of Dr. Roheim's.

The chapter on "Central Australian Psychology" is an important illustration of "applied psycho-analysis." Ethnological material is re-assembled and re-interpreted with new emphasis by using the Freudian concept of Personality in reference to a hypothetical average Central Australian native.

Firstly, this material, such as cannibalism, circumcision and subincision, generosity, onanism, the myth of the *alkmarintja* woman, etc., is discussed in terms of patterns of behavior derived from three stages of development: the (nursing) oral interval; the succeeding anal interval, and the genital interval. In comparing these natives with whites, Dr. Roheim summarizes as follows (p. 94):

The essential differences are to be found not in the id at all but in the ego. In character development the straight line, i.e. sublimation, is predominant, while reaction formation of the anal type is absent. Repression goes only skin deep, there is no latency period and the phallic organization survives into adult age.

It would be difficult to find a more important ethnological statement than this, and it is because of such conclusions that Dr. Roheim's results can no longer be brushed aside.

Secondly, in this same chapter material is interpreted in terms of the id, ego and super-ego, which are described (p. 94) as "our inherited tendencies," "environmental influences," and "society as the representative of the parental imagos," respectively. This is an inexcusably misleading statement because early environmental influences which survive as conditioned reflexes are classified, in orthodox Freudianism, under "super-ego." Dr. Roheim corrects himself to some extent (p. 106) by subsequently saying:

Our individuality is the result of an interaction between three autonomous factors, the id, the ego and the super-ego: that is, roughly our desires, reality and our moral inhibitions,

where apparently reality is used in the restricted Freudian sense; namely, reality as perceived by a particular entity. Dr. Roheim's discussion of the ego is confined to defence mechanisms whereby phallic demons, children's anthropophagous demons of both sexes, etc. are described by the process of projection as in paranoia. In addition, he groups under "Narcissism" (p. 103) his information about an immortal protective double (*ugantja*) which remains in the ancestral cave with the *chuwanga*, and another double (*kurun*) which follows "the real person" (*wella ndurpa*). He discusses "the *iti-iti* (unborn children)," one of which "having passed from the father into the mother" continues to grow, while the other does likewise in the ancestral cave. Thus, (p. 105) he states:

... the real man under the care and protection of the hidden likeness—this is the correct description of what we mean by narcissism.

In view of the extensive literature on *Doppelgänger* and Freud's recent paper concerning the narcissistic type, it is to be expected that Dr. Roheim will publish an adequate treatment of primitive narcissism.

Dr. Roheim applies the super-ego concept to the customs associated with death. It is apparent that the son-in-law is called upon to act as if he were guilty of the death and is expected to punish himself with "self-inflicted wounds." A scapegoat from another tribe, however, theoretically undergoes the full punishment of death at the hands of a revenge expedition from the tribe of the deceased. Such action is hastened by further guilt, for the son-in-law has intercourse with the wife of the deceased, a contact, which at other times, is strictly forbidden. Up to the present time, no concepts describe the unconscious motives underlying mourning customs as satisfactorily as do Freud's.

Dr. Roheim's description of a ceremonial food distribution among the matriarchal Melanesians of Normandy Island is a step by step translation of a sequence of acts into their symbolic meanings. To do this, he relies upon his observations and upon interpretations of incantations and myths, which are sometimes explicit. These latter, however, are often drastically deleted, thus rendering the reader a helpless spectator of the author's offerings.

The sketch "Doketa" is the first published fragment of the psycho-analysis of a primitive *in situ*. As to the importance of such work, Dr. Roheim remarks (p. 151):

But in order to understand a society thoroughly, we must study it in its individuals.

Therefore, in this sketch, Roheim has studied phases of the local society as revealed by the customary Freudian interpretations of thirteen of Doketa's dreams and a few associations. No description of Doketa's personality is attempted, but the sketch is of permanent value where it demonstrates the advantages of this supplementary method of field work.

Doketa is a local chief converted to Christianity, and Roheim successfully shows, among other things, that Doketa as a child came to fear certain aspects of his mother, and to dread "sorcery," which his father practiced with distinction. Doketa (p. 173):

is a peaceful Christian... but in the depths of his heart a great *barau* (sorcerer)... Christianity offers him the protection of a new father who sits beside his son, and a son who is identical with his father... It is true that the old social organization could have given him exactly the same substitute formations. But in adopting the new religion, he was satisfying both aspects of his Oedipus complex. He was giving up aggressiveness, the *barau* art, and at the same time he was realizing his Oedipus wishes by supporting a religion that had set out to suppress the *barau* and the old order of things. By becoming a Christian, Doketa has found a temporary relief from his old anxieties.

The chapter on the "Super-ego and Group-ideal" is an unsuccessful attempt to compare vague group-ideals of the Central Australians, the natives of Normandy

Island, and the North American Yuma Indians. Dr. Roheim's introductory remarks (p. 4) apply especially to these pages:

I confess that my views are still in a fluid state and that it is really premature to publish results.

The final chapter concerns Somali sexuality. Dr. Roheim concludes that a male's sexual contact is sadistic and physical, in the narrowest sense of the word; and that the female is, therefore, unsatisfied. He attributes this and the frequent symptom of *ejaculatio praecox* in part to clitorectomy and infibulation. He adds, however, (p. 212) that "the Somali have no individual obsessional neuroses . . ." and (p. 220)

Summing up, we may say that the peculiarly excitable, very quarrelsome and vain character of the Somali is, like the custom of infibulation, connected with a specific way of dealing with castration-anxiety. Part of it is dealt with by reaction-formation and manifests itself as masculine courage and exaggerated national pride. Part is repressed.

[Castration-anxiety is, in itself, merely a reaction-formation to various deprivations, such as the early loss of love.] His concluding sentence is as follows (p. 221):

We see, then, that the sexual practices of a people are indeed prototypical and that from their posture in coitus their whole psychic attitude may be inferred.

Such broad generalizations should not be ridiculed, but on the other hand his information is too meagre to support them and unfortunately too much of his material is anecdotal and thus reminiscent of nineteenth century ethnology.

Dr. Roheim specifies that no unpsycho-analyzed person can adequately understand his work, nevertheless, to anyone who has some slight knowledge of Freudian terminology his pages will prove unusually stimulating, and in this respect this review by no means does him justice.

Since these chapters of Dr. Roheim's show the same defects as his previous works, the following criticisms are relevant. It is unfortunate that ethnologists should come into contact with psycho-analysis via Roheim because his mental processes inherently lack the directness and lucidity of an Abraham, a Sachs or an Alexander. Nor is he an experimental investigator. He has worked with certain formulas, modified from time to time by the developments in his field of psycho-analysis, and these he has applied to ethnological data, but so far as I know during the last fourteen years he has not contributed a single significant modification to the theory of psycho-analysis, even though his material teems with these possibilities.

Although I have no first-hand knowledge of the peoples he describes, there are indications in his paragraphs which convince me that he is a highly trained and accurate observer, but that when he comes to order his material he often unconsciously distorts it and misleads his readers. His presentation is undisciplined where he intentionally follows many leads into remote myths, tales, customs, ceremonies, etc., so that he soon becomes the victim of his expanded material. Added to this, there is frequently an astonishing proliferation of his own ideas, so that he again and again loses himself and his reader. I have used the word "ideas" but Fliegel of the London Psycho-analytical Society more aptly defined many of them as "free

associations" in his 1928 review of Roheim's *Australian Totemism*. In the present chapters, Dr. Roheim again introduces his preprimate rutting season and is repeatedly and monotonously concerned (and very seriously) with events in the primal horde. Darwin in his *Descent of Man* was justifiably wary of his surmises about a primal horde, and be it remembered that the genius of Freud was quick to adopt, for his conjectures, the title of "A Just-so Story."

WILLIAM MORGAN

PHYSICAL ANTHROPOLOGY

Roentgenologic Studies of Egyptian and Peruvian Mummies. ROY L. MOODIE (Field Museum of Natural History, Anthropology, Memoirs, Vol. III, Chicago, 1931.)

Professor Moodie, by his numerous contributions to the subject, has inalterably linked his name with that of paleopathology. His recent publication *Roentgenologic Studies of Egyptian and Peruvian Mummies*, represents the latest of a series of studies bearing upon that subject. Of the two kinds of material most generally available to students of the pathology of ancient biologic remains, skeletal parts and mummies, the latter form the scarcer part, but yet the portion potentially more fruitful for research. Investigation of the pathology of mummies may be prosecuted in the direct manner by gross and microscopic examination of water-infiltrated soft parts and of bones, or in the indirect manner by use of X-rays. In his book, the author has chosen to present the case for investigation by the indirect method.

The chief reason for X-ray study of unopened mummy packs is that of the great value of intact mummies as museum objects. The curator in charge of a fine specimen hesitates to permit destruction of such irreplaceable material. The author speaks for a wider use of the roentgenologic method of examination in such cases, through which information may be gained without damage to the specimen as an entity. That he is fully cognizant of the limitations of the roentgenologic method is demonstrated by his statement.

In all mummy packs there are many obscuring features, such as the use of dense materials in embalming among the Egyptians, and the inclusion of objects of metal, ears of maize, pottery, beads, shells and other trinkets, and the presence of clumps of sand and small gravel in mummy packages from both Egypt and Peru. Slight surface lesions, osteoporosis, and in many cases trepannings, traumatic injuries, and even linear fractures pass unobserved in a Roentgen examination of unopened mummy packs, on account of the superimposition of materials denser than the involved areas through which the shadows are made.

However, such limitations by no means vitiate the usefulness of the method. Concerning unopened mummy packs, the author is able to say:

We learn that there is none of the bony manifestations of rickets to be seen among the mummies of twenty-nine children less than fourteen years of age, from pre-Columbian Peru. A trace of the disease was found among the ancient Egyptians.

And again:

It is impressive to note the high percentage of disease and injury among the fifty-three mummy packs studied. Among the pre-Columbian Peruvian mummies, the incidence of disease

and injury is 10.52 per cent. Among the Egyptian mummies studied the enormous figure of 40 per cent is deduced as the incidence of disease and injury, based on fifteen mummies . . . Undoubtedly a much lower percentage would result if we could base our count on a larger series of ancient mummies.

The case for the use of X-rays in particularly precious mummies (e.g., royal mummies of Egypt) in which direct examination is impossible, is well put. In the instance of any fine specimen, there is always the possibility of much to be gained and nothing to be lost in the suggested procedure, especially if the X-ray pictures obtained approach in quality, and especially in wealth of detail, those taken by Miss Bolan and which serve as illustrations to the text. Information relating to age, particularly in the mummies of younger persons, to sex, to physical anthropology, as well as to pathology, is available to those who can interpret. In the quality of the X-ray reproductions alone, aside from the interpretative value of the text, the author has set an extremely high standard for those who are to follow.

Each X-ray picture is accompanied by a statement as to source of material, age, sex, and a brief note on the pathology to be seen. A review of the history of roentgenologic study of mummies, with bibliography, is given. The text ends with a series of summaries on the various lesions and diseases which have been identified in mummies, some of which are illustrated in the plates.

Professor Moodie's book is a distinct contribution to the study of palaeopathology. Besides the usefulness of the book itself for reference, it is pregnant with suggestions to students of man and his diseases.

G. D. WILLIAMS

NORTH AMERICA

Social Life of the Navaho Indians, GLADYS A. RICHARD (Columbia University Contributions to Anthropology, vol. VII, 1928.)

When we read in the introduction of this work (p. 1) that "the genealogical method . . . was most successful" of the various field methods tried, our interest is naturally aroused. To carry that method through in a population of 35-40,000 is not a small task. Then, too, the author tells us (p. 3) that,

to answer the questions of interest, namely, clan as an institution, family, marriage, naming, property rights, etc., genealogies were secured which accounted for approximately 3500 individuals.

The genealogies which are taken chiefly from five or six districts on the reservation represent a very fine effort. There are seven genealogies from the Shiprock district, six from the Lukachukai, two from Tsehili, one from Chinlee, perhaps eight from Keam's canyon, and three from the Ganado district. The author undoubtedly feels that even these genealogies are scarcely representative of the vast districts which she covered. The upper San Juan river country, Largo canyon, Huerfano mountains, then Pueblo Bonito to Toadlena and the entire east and south sides of the reservation, let alone the west, and part of the northwest side have remained untouched.

The reviewer considers it unfortunate that this "intensive portion of the work" (p. 3) was not extended farther. While it may be true that the genealogical method made it apparent that thereby "only a one-sided view of Navajo social life could be obtained" a number of questions remain unanswered. The geographical method

to discover the predominating clans—and the absent ones—their approximate number and their affiliations

is certainly not as satisfactory as we expect the genealogical method to be. The reviewer is personally acquainted with most of the interpreters and informants whom the author has employed. He believes that a wonderful opportunity was presented for checking up, by genealogies, on predominating clans, on absent clans, the strength and affiliation or groupings of clans. Chapter IV on the clan groups (pp. 36–50) shows so much diversity of opinion among native and foreign authorities, that a genealogical check alone seems able to unravel clan affiliations. For the five districts considered, the tables of size and distribution (pp. 22–25) give us a fair concept of what could be accomplished. The distribution charts, however, on pages 26–27, give us a vague idea only of clans represented, nothing of their numerical strength, nor anything by which we could check up informants. Marriage preferences (p. 60), family and clan preferences (pp. 62–69), too, could have been greatly improved by tables, instead of by random examples, showing such preferences from facts presented by the genealogies. The "mass of material" at her disposal should have been used to show "that certain clans tend to affiliate with certain others." Since this is not done and the author seems to use this material as needed, it becomes extremely difficult at times to segregate facts based upon the genealogies from those based on other sources.

The reviewer hesitates to subscribe, for instance, to a statement like this (p. 61):
I feel that the Navajo are proud of Hopi descent—it seems to add a touch of aristocracy.

Presumably, the author desires this restricted to the Tuba City area. Unfortunately there are no genealogies covering the districts of Canyoncito and Tuba City to check up on marriages with Pueblos. But Genealogies IX A, IX B, IX C, and X, which are taken from the Keam's canyon area, do not seem to indicate much of a desire "to add a touch of aristocracy" by Hopi alliances. Out of approximately 600–700 individuals listed in these four genealogies the *txótsòní* (10), the *kì yà'á nì* (22), the *txátci nì* (20), *txábáhá* (36), and other recognized Navaho clans are well represented. True, the seven or eight individuals whose genealogies are traced here do not sufficiently cover the vast area of the Keam's canyon district. In age of settlement, however, this district antedates the Tuba City district, which was purchased by the U. S. Government from Mormon settlers less than thirty years ago. With the ramifications which the Keam's genealogies show, one could reasonably expect to find Hopi descendants. The reviewer is also aware that a number of *kì yà'á nì* (22) themselves hold that they are originally of Hopi descent. He has himself held this view, but has found better foundation for the belief that this clan can be reckoned among the older Navaho clans. Finally, since genealogies from other

districts do not show a marked predominance of individuals of Hopi descent, the pride taken in this descent is probably localized.

One can readily agree with the author that clan myths (p. 32) should have more attention. The reviewer would separate these entirely from the creation myth and suggest a search for individuals in each clan who are preservers of the clan's traditional origin story. Since versions of the creation of the first four clans do not agree on their identity, and some informants go so far as to say nothing of the other existing clans, it seems quite likely that the custodians of clan lore may be able to assist us on this point. Now and then one may meet with a "totemistic flavor" (p. 33) in this clan lore, as when a txóàxè·dlí·nì (24) calls himself txéxòitsódi bááltcíní, a child of water monster. In one version of xójó·djí, the girl child of water monster, is claimed by the txátci·nì (20). At any rate, clan myths could be sifted for a true grouping of the clans.

On the other hand, the names of the clans themselves suggest a legendary origin (p. 40). New material obtained since the time of Dr. Washington Matthews, whom the author repeatedly cites, establishes the fact that White Shell Woman and Changing Woman (*ib*) are identical. The first creation mentioned has reference to mythical beings like corn boy, corn girl, perfect kernelled corn and round corn, pollen boy and cornbeetle girl, etc., which no well informed native will affiliate with clans. The creation mentioned as the second one by Dr. Matthews seems to be the only creation of Navaho people, as far as one can judge from present available material. The informant of the xójó·djí, or blessing way, who gave the new account of which I speak, had little to say of additional peoples beyond the curt remark that the four clans would meet some relatives in the Navaho country. The fact, however, is that far more than four peoples (or clans) are found, and Dr. Matthews' account must continue to be our best source of information on Navaho clan origins.

That slavery was responsible (p. 15) for the increase of the tribe and its clans seems to be well enough established. And that the change in the attitude of older clans towards later acquisitions has been comparatively rapid could be well shown by the genealogies. The author shows (p. 24) sufficient data to indicate some strength of foreign clans such as the ná·kài·dìné'è' (25), Mexican clan; the kìnìtci·nì (15), Red House of San Juan Pueblo; the mà'ìdècgì·jní (33), Jemez clan, whereas the dibéñjini (34), San Felipe, and t'łógí, Sia (40), seem weakly represented in the five districts. While there are members of the Jemez, Zuni, and Mexican clans, which entered the tribe at various times, the strength of these clans cannot be definitely established unless these groups are kept apart. The reviewer has heard the distinction made for the "original" Jemez who are not slaves, then for the "priest-killer" Jemez, who entered as refugee slaves in 1680, and for real Jemez captives. Difficulties will be met in finding individuals "who confessedly" (p. 15) belong to "slave" branches. The relationship or grouping, found in genealogies, would probably give us a clue to such affiliations. A question of interest, too, would be the extent to which a foreign clan is restricted by marriage regulation. More genealogies would assist us considerably.

The author has evidently endeavored to include every phase of social life. The variety of subjects treated, and repeated references to the same subject in the fourteen chapters, let one sorely miss an index of subjects. The hogan is mentioned on page 7 and page 51. The reviewer suggests that at least two types of "winter" hogans are ceremonial, in the sense that a ceremony may be conducted in the conical and in the round roof types only. The remark (p. 51) that

in old days the attendant ceremony required a considerable outlay on the part of the builder seems to imply that the building or completion of the hogan required a dedicatory ceremony with considerable outlay. A ceremony may be conducted therein, but is not required for occupancy. The sprinkling of the poles of the cardinal points is optional, and may be done later and repeated at any ceremony. Not all ceremonies require a specially built hogan.

Speaking of sandpaintings, on page 8 we find so-called

"yeibitcai" blankets, that is, those imitating sand-paintings

which, presumably, has reference to the sandpainting of the yeibitcai? On page 9

The paintings. . . are made . . . during the progress of the religious ceremonies . . .

should read "of some ceremonies," as a number of important ceremonies do not feature sandpaintings. On page 10:

The performance over the sand-painting has dramatic elements, birds fly and sing, snakes pull their heads in and out of a sacred house and wind their tails.

This statement can hardly be extended to every "performance over a sand-painting." As a rule this "performance" is very simple and prayerful. A feature of one ceremony should not be generalized in this manner. A similar generalization may be found (p. 9) relative to song, dance, and myth which,

considering their content may very possibly have been originated by men.

A qualification would do no harm here. The same paragraph treating of "literary devices" leaves much to be desired. Personification, for instance, implies more than a literary device in Navaho ceremonialism. The dawn, skyblue, evening twilight, and darkness are personified and real humans. Clouds, thunder, sun and moon carriers, talking god and housegod, the soul forms of the sacred mountains, of the earth and sky are rather more than "poetic allusions" to natural phenomena. Much, too, could be said of the "holy number," of gender, color, direction, both sunwise and sunward, etc., etc. The following statement on page 10 seems rather hasty:

Stars have not been used much . . . probably because they are used for purposes of divination, and are therefore too sacred to use in secular or even ceremonial literature.

Star-lore is well represented, constellations are punctured on gourd rattles, the big star ceremony with its paintings and prayersticks is well known, at times stars are consulted by diviners, and many references to stars are found in a number of songs of various ceremonies

The author has well emphasized the position of woman in the tribe. The statement on page 53 that

as proof of her complete knowledge of a given rite she may learn the long mnemonic myth seems to imply that every rite is accompanied by a long mnemonic myth. The reviewer has no knowledge of such myths. The

kethawn encyclopedia . . . is given to each singer by his or her teacher

(pp. 53 and 147), is true only if the pupil asks for this sample roll and then may construct it under supervision of his teacher. Frequently singers depend on memory only. The observations made on the power of prayersticks (p. 158) should be revised to read that the prayerstick belongs to the divinity to whom it is offered. The Navaho therefore does not "preserve them in his ceremonial bundle." The ritual in so many instances determines the places of prayerstick deposits that it strikes a peculiar note to say

it would be tempting the supernatural to leave it where that stored power could be destroyed. "Magic words" (p. 53) and "sacred names" (p. 91) seem to be identical, and we learn that "there are sacred names for sheep, horses and hard goods "which sacred names" are not the same in different families" (p. 91), and that women (p. 53) "may inherit magic words," and "some unusual individuals possess the 'sacred names' of property."

"By 'hard goods (*ntis*)' " (properly *ñt'łiz*)

is meant cash, silver ornaments, precious stones, horse trappings and the like (p. 89).

The author also explains "soft goods" as consisting

of calico and materials, blankets, rugs, sheepskins, clothing, etc. (p. 89).

In Navaho ritual terminology *ñt'łiz* denotes chips of recognized jewels, white bead, turquoise, abalone or haliotis, jet, to which at times red-white stone, spiral and flat conchs are added. Silver or other metal ware, coin or trappings, although hard in themselves, are not ritually "hard goods," but may be included in prayers for the increase of property. "Soft goods," ritually, included only robes, skins, and sewed or woven Pueblo fabrics which now have been replaced by the calicoes put down as an offering to the singer. When prayer and song petition for an increase of "soft goods," it is very probable that robes, bedding, and clothing are included in these petitions. All jewels are included in the general term *ñt'łiz* *àłtxàs'ái*, mixed jewels, and all soft goods in the term *yódí* *àłtxàs'ái*, mixed soft goods, which are their sacred names in the *xójó-djí* or blessing way. The sacred names of sheep, cattle, and horses are of later introduction, in the opinion of some singers, and should therefore be rejected. Other singers, however, consider them legitimate and the late *àdìłdìł*, stick-dice gambler, for instance, was credited with the knowledge of these names, and used to be employed "for the increase of livestock." As such knowledge is guarded very closely the reviewer hesitates to accept even the suggestion that the sacred names of property "are not the same in different families."

The Tribal Assembly described on pages 108-111, offers some interesting new material. In the light of additional material obtained after the publication of this book, it seems very probable that we are dealing with a "gesture dance," called *nà·tcìd*, not *nate'it*, as the author spells it. This gesture dance, a "wide gesture dance," and another gesture dance called *nà·txádídjádi* seem to have been features of an extended war dance which usually closed with the ordinary girls' dance. It is hoped that this material will be ready for publication at an early date. The author's chapter on the war dance (pp. 112-133) condenses what had been published previously and adds new material, particularly on the "mud dance." The reviewer feels that the text material of the "war dance" may offer a number of points at variance with some of the views expressed by the author in this and other sections of the book.

Evidently the *kinaldá'* ceremony (pp. 135-139) is part of the *xójó·djí*, blessing rite. The ceremony of this rite is ordinarily a one-night affair and is called *dò·'ì·rà·j*, no-sleep or vigil. It is perhaps on this account that an informant of the author had referred to "the man who leads the singing" as "*doitgacda*, he stays awake all night." The sense is that he "conducted the no-sleep ceremony." There is a better "legendary record of the nubility rite" in preparation than the one recorded on page 135. Other references to the ceremony are found on pages 145, 148, and perhaps elsewhere.

The "scraps of medicine lore" (pp. 145-148) can hardly be considered more than scraps. If we single out the emetic (p. 146), it is because of the peculiar statement that

an emetic must be taken by a singer of *to'tc'o'ji* who must vomit four times before a ceremony.

Presumably the *xótcó·djí*, literally "evil condition side" of several ceremonies, is meant, which is a phase of these ceremonies to dispel the influence of the ghosts or spirits of the dead. The emetic is featured on four days of several five-night ceremonies, and is usually part of their fire ceremony. The author mentions several of the ceremonies. Another distinction is made in some ceremonies, for instance, the *díné bíñtci'djí*, Navaho wind way ceremony, between its *xójó·djí* peaceful side, and its *xótcó·djí*, evil or harmful side, the first being used when the patient has not been injured, the second when injury to the patient indicates that the wind people or associates are angry with him.

In the opinion of the reviewer, Navaho ceremonialism is a field quite apart from the social life of the tribe. One influences the other, no doubt. Ceremonialism in this tribe, however, is so intangible (cf. p. 90) at times that our present knowledge of it suggests extreme caution in accepting statements which must eventually be "scrapped." Much more caution is suggested in drawing conclusions from random statements which, if ascribed to a given ceremony, should be interpreted in their proper setting. Perhaps the reviewer is too exacting and cautious in this regard even with his own informants. His present researches in the field of Navaho ceremonialism, however, have taught him that caution is never misplaced here.

The several chapters which treat social aspects of Navaho life are well presented,

and much new material has been gathered, which is appreciated by all students of the American Indian.

FATHER BLRAND, O.F.M.

Old Man Coyote (Crow). FRANK B. LINDERMAN. (254 pp. New York: John Day Co., 1931.)

The author's *American*, a biography of the Crow chief Plenty-coups, has been reviewed in this journal (A A., 34, 532, 1932). The present volume is a collection of tales, by no means all of which centre about the titular hero; and like its predecessor it contains material of some utility to the ethnographer.

Under his first caption, "The Bird Country," Mr. Linderman offers two quite distinct stories told by one of his informants, Cold-wind. The one explains how Old Man Coyote made the body of the pin-tail grouse from the muscle of a bull, used hairy caterpillars for its toes, the claw of a wolf for a nose, etc., and then ordered the bird to dance in the spring-time (p. 21 ff.). This has a closely similar counterpart in a section of an unpublished creation myth which I secured from Yellow-brow in 1931. The other story (p. 22 ff.) is similar to one of my printed tales (*Lowie, Myths and Traditions of the Crow Indians*, A P A M N H, 25-158 ff., 1918): a young faster declines blessings offered by the meadow-lark and other birds until the Seven Cranes promise to take him to the bird country. A significant resemblance is the lifting of the sky by means of a pipe.

The Dwarfs' Ward (Lowie, op. cit., 165, 169) appears in fundamentally similar form (Linderman, 35 ff.). There is the loss of a child strapped to a travois; his adoption by benevolent Dwarfs, the localization in Pryor Canyon; the boy's aiding the eagle in his feud with the dragon that devours his young, the monster being killed with hot rocks. The Dwarf's command that passers-by should pile up stones and shoot arrows into the rock likewise recurs. On the other hand, the tale of the Two-faced People (52 ff.) with their slave Magpie Feather who overcome and kill one group of Indians after another in gambling until conquered by a boy hero aided by Old-Man Coyote is new to me.

The Trickster tales are all true to type. As in previous Crow collections, Old-Man-Coyote is sometimes coupled with a real coyote or kit-fox (called One-Man by Mr. Linderman, Cirapé by my informants) who often gets the better of him,—stealing his roast ducks when he is caught by creaking trees (p. 81 ff.; cf. Lowie, 25), or the meat of buffalo killed in a race down a cliff (p. 91 ff., cf. Lowie, 19). The episode of the hoodwinked birds is reported (p. 99; cf. Lowie, 33). A widespread motif I cannot find in my own cycle is the duped Old Man Coyote's diving for his deceivers' reflection (p. 105). "One-Man" also fools Old-Man-Coyote by making away with one paunch after another when sent for water, on the plea that some being in the water always snatches the vessel from him (p. 133). Old Man Coyote's marriage to Whirlwind-woman and his escape with the aid of rodents is common to the two collections (p. 197; Lowie, 32).

Two romantic stories (p. 139, p. 169) start with a haughty beauty who spurns all lovers, being bent on marrying a particular man. These tales correspond to my

Worms-in-his-face and Corn-Silk tales (Lowie, 119, 107) Mr. Linderman's version of the former, like mine, introduces small animal helpers to aid the heroine, the magic flight, escape to a boulder, and ultimate destruction of the wicked husband by a boy hero who keeps a mountain-lion and a bear for dogs. He and his seven brothers adopt the girl as their sister, they are attacked by an ogre woman, but the boy conquers her, and after a characteristic debate as to what they shall turn into (Linderman, 165, Lowie, 126) the brothers ascend to form the Dipper. In the other tale, the Buffalo-wife's rival is Elk-woman instead of Corn-woman (as in my version), but the testing of the buffalo-cow's husband, the race with her mother, and the winning of all buffalo by the hero are common to both variants.

Mr. Linderman's equivalent of Lodge-boy and Thrown-away—his rendering "Lodge-lining and Spring-boy" comes closer to the Crow names—is fairly orthodox in form (p. 110 ff.; cf. Lowie, 74 ff.). The same applies to his version of the Old-Woman's Grandson myth (p. 208, Lowie, 52-74), the most popular of Crow hero stories. The porcupine decoy and the Sun's taboo against shooting at meadow-larks and digging a many-stemmed big root parallel celestial episodes in my versions. The determination of the unseen child's sex by the old woman; the transformation of her red corn into black-birds, her clandestine feeding of a dragon husband, are also significant resemblances. The boy's exploits include overcoming of a bear, the pot-tilter, a sucking-monster, and the snakes. In the last-mentioned episode the snakes begin the story-telling contest,—one of the two alternatives represented in my six versions (three unprinted). Most interesting is the recording of the calf-foetus incident, which obviously is a very distinctive Crow-Hidatsa feature, though less elaborately found among the Arikara. Thereby hangs a rationalization which is thus given by the informant Plain-feather:

Never does he [Morning-Star=Old Woman's Grandson] show himself during certain moons, never until the Buffalo-calves are born on the plains does the Morning-star shine in the sky (p. 254).

This is identical with the statement of one of my narrators (Lowie, 74).

Mr. Linderman's renderings are too free to assist in a study of style; but, as the foregoing comments indicate, his variants give the general reader a conception of Crow plots and help the specialist in ascertaining tribal norms and individual deviations from it.

ROBERT H. LOWIE

Southern Paiute, a Shoshonean Language. Texts of the Kaibab Paiutes and Uintah Utes. Southern Paiute Dictionary. EDWARD SAPIR. (Proceedings of the American Academy of Arts and Sciences, vol. 65, no's 1, 2, and 3.) 730 pp. 1930-1931.

At last, after many years, we have Sapir's Shoshonean material at hand. It will naturally enough supersede previous papers on Shoshonean linguistics. And when we have more material as good in both quality and quantity as we have in this volume it will be possible to know exactly what the American stocks are. The only adverse criticism I can make is one of form. Had there been more references by page

and line to the texts, the usefulness of the book would have been greatly enhanced. It would also have spared any reviewer much labor in verifying statements. This, of course, is but a detail. Let us be grateful for the handsome volume presented.

T. MICHELSON

Dancing Gods: Indian Ceremonials of New Mexico and Arizona. ERNA FERGUSSON.
(\$3.00. New York: Alfred A. Knopf.)

This is a book no student of the Southwest should miss. Erna Fergusson is no ethnologist, she is not even particularly interested in what may be back of these colorful dance pageants, but she has been about a great deal and what she has seen she has recorded well. Her descriptions include the eagle dance at Tesuque, the deer dance at San Felipe, the Pecos Bull at Jemez, the parrot and the corn dances at Santo Domingo, the *Lehewe* and the *Shalako* at Zuni, Powamu and Niman at Hopi, as well as an admirable antelope- and snake-dance description from first and second mesas, a Navaho mountain chant, and the Apache masked dance and girls' adolescent ceremony.

Several of these, and others that fill out her book, have not been described before, and ethnologists must be grateful to the author for her vividness and accuracy. It is no easy matter to describe Southwest dances so that they remain identified in the reader's memory, and Miss Fergusson has accomplished this without wholesale sacrifice of details that are ethnologically important. One need only compare the account in this volume of the Zuni *muwaiye* with Mrs. Stevenson's. It is a good example of Miss Fergusson's description:

There appear the three virgins, lovely as great white chrysanthemums in their ceremonial garb. They move sideways into the plaza. The girls wear white ceremonial robes, draped to give the effect of a full skirt with ruffled peplums, and a blouse that leaves one brown shoulder bare. Their feet are in white moccasins with shiny black soles turned up at the toes in tiny triangles. Each girl wears all the turquoise she can carry, a solid mass from the chin to the waist, ears and arms and hands laden. Each is topped by a head-dress of shining black fur, under which her own hair hangs to the waist behind, to the lips in front. The headdress bears bunches of yellow and fluffy white feathers, but its special beauty is in a tall slim *tablita* of rose and turquoise-blue which is cut into shapes of sun and moon and stars. They carry wands daintily feathered with white down, which enhance the beauty of the lovely floating movement in the second part of the dance. The youth is a white figure also, in kirtle and sash and full-sleeved shirt. His hair must be long, even if it requires the use of a wig. He carries a *m'h*.

The first movement is no more than a slight bending of the knees, a strained and difficult gesture, done in time to the chanting. This they do several times, the hand moving up and down; then, on a sudden change of the rhythm, they bend at the waist, bringing the wands down in a hard and insistent motion. The chanting is varied by one voice wailing the word "muwaiye" which is the Zuni name for the dance. Suddenly the rhythm changes, the wailing voice ceases, and there seems to be hope in the music and a beautiful lightness in the dancing. Now the dancers fling their arms wide as they bend their knees, the right hand coming to the left shoulder as the left arm flies out in a free floating gesture, very graceful and very young. Then the right arm straightens and the left hand comes to the right shoulder. The knees still

bend rhythmically, but more easily, and the dancers move slowly the length of the space and back. Then the music changes to the original hopeless note, and the figures are repeated.

Apart from the addition of hitherto undescribed dances, and the excellence of the descriptions, *Dancing Gods* is interesting to any Southwest student as a commentary on the scope and limitations of eye-witness study of Pueblo culture. It is as if some one described the mass with no idea that the bread and wine were focal points of the ceremony, or any idea of what they symbolized. The intricate convolutions of the priests, the ringing of bells, the rising and kneeling, would all be there, and would be a strikingly complicated art form, all the more intricate that the motivations for the acts were withheld from us. In Miss Fergusson's Southwest descriptions, for example, no connection appears between the *santu* and the "doll dance" given in Zuni in her honor, and without the role that is played by the opening and "dancing" of the three sacred bundles of the associated societies the *Lehewe* ceremony is a series of miscellaneous performances. *Shalako*, too, without the functions and interrelations of the cults is a medley of fortuitous dancing and impersonations. As art forms, however, the dances do not necessarily suffer in such an account. One may well read them with a quickened interest, forgetting all that they mean in the life and thought of the people, in this version that strips them to the record of the eye.

Any statements in the book that are not eye-witness descriptions are to be discounted. Fireplaces are not pre-Columbian, "all pueblos" are not divided into Summer and Winter peoples, the *Koyemshi* are not thought of in Zuni as a "warning against all evil" because they are mythologically the offspring of an incestuous marriage. It is easy, however, to set such statements aside, in the recognition of Miss Fergusson's care in her descriptions of the spectacles she has seen and her appreciation of them as art forms.

RUTH BENEDICT

Eskimo. PETER FREUCHEN. Translated by A. PAUL MAERKER-BRANDEN and ELSA BRANDEN. (\$3.00. New York: Horace Liveright.)

Peter Freuchen went first to Greenland as meteorologist of a Danish expedition. He returned and lived as governor of a trading-post of Polar Eskimo for fourteen years, and he many times accompanied Rasmussen in journeys over large tracts of the inland country. He became Eskimo not in order that he might contribute to knowledge, but because he liked the life they led. He spoke Eskimo, and he married an Eskimo woman with whom he lived until she died.

The story he has written of Eskimo life is of more importance to ethnologists than most anthropological monographs on primitive people. It clothes the framework of Eskimo culture with flesh and blood, and shows it operating in clearly defined and well-communicated situations, in which the motivations proper to Eskimo culture become intelligible. Most of the aspects of Eskimo life find a place somewhere in the story: hunting, whaling, and slushing with a dog sled; intimate domesticities, and the handling of children; relations of husband and wife, abductions, and

conflicts between families; relations with the whites, and the incompatibility of standards; the death of the aged in the self-chosen isolation of the sealed snowhouse. Many of these situations are described to better advantage than in even an excellent monograph, and those especially that have to do with human relations can be used to supplement more formal anthropological descriptions.

Ethnologically the interest centers upon the picture of the Nietzschean superman which Freuchen has drawn as characteristic of Eskimo culture. It is obvious that in his tale Freuchen has written not merely a saga of the Eskimo, but the saga of himself. The violence, the contempt of weakness or pity, the forthright appropriation of what one desires, these are clearly congenial to his temperament, and Eskimo life has given him an opportunity to write of them with strong un-Christian enthusiasm. This gives to the book much of its swing and movement, and makes Freuchen a fortunate Eskimo chronicler, it does not prove that his picture of the Eskimo character is distorted. At all events, the distortion, if there be such, is possible to the same degree in any monograph that goes beyond the record of material culture and the kinship terminology, the possibility does not arise because the record is in novelistic form but because it deals seriously, as many monographs do not, with human relations.

Eskimo practically omits shamanism and the supernatural. It is the saga of Mala, the strong hunter, from his clumsy confused early manhood when, already the father of sons, he feels shame at every encounter outside the family group. Would he never have asserted his strength if his wife had not been killed? A man cannot live without a wife to keep the clothes in order and prepare the meals, and there are in an Eskimo camp no excess women to choose among. In order to get himself a wife, he killed openly first her husband, later the two brothers of the dead man, and later still the husband with whom she lived while Mala was held in detention by the whites. "It was either he or they. Life is like that." The long delay in final retribution while both enemies work shoulder to shoulder at the fishing or move carelessly about the camp, the sudden stroke, the contempt for outcries, the terrible blood lust that comes upon the slayer after his victim is dead, all these are more convincingly depicted in the story of Mala than would be possible in any less novelistic account.

It is interesting too that even the strong conventionalized contempt in which women and their opinions and preferences are held does not operate to make of them an abashed and inferior sex. The abducted wife who annoys her new husband by her wailing goes right on wailing week after week. She beards her lion in every way that custom leaves open to her. She taunts him on every subject he has nearest to his heart. She fights him with her fists with no thought on his side of pity or of cowering on hers. And this is not a picture of one outstanding woman, it is a composite of several wives, none of them singled out as exceptional.

Eskimo is the best evidence so far given that novels of primitive people can be of ethnological importance. Freuchen has the story-teller's gift, and a delight in the life he is depicting; beyond this, his story carries conviction of the fundamental authenticity of his portrayal of Eskimo character.

RUTH BENEDICT

The Temple of the Warriors. EARL H. MORRIS (251 pp. 70 ills. New York: Charles Scribner's Sons, 1931.)

Mr. Morris has presented in this book a straightforward and very readable account of

the adventure of exploring and restoring a masterpiece of native American architecture in the ruined Maya city of Chichen Itzá, Yucatan.

The center of interest is always the great temple, but a judicious choice of incidents of daily life during the four field seasons in the springs of 1925 to 1928, creates a vivid picture of the circumstances under which this archaeological work was done.

The story is divided into nineteen chapters, with titles which invite the reader, such as "III. A Crimson Altar and Twins of Stone," "X. We delve beneath a Massive Wall," and "XVII. Angelino sees it through." The second chapter, "Sons of Priests and Kings" is devoted to an outline of the known history of the Maya civilization, by means of which the reader is enabled to place the story in its proper archaeo-historical setting. The climax of the book is the finding of the turquoise mosaic plaque. A sense of humor and a sympathetic understanding lends character to the easy flowing style of writing. Once, when a huge hopper had been built for loading the dump trucks, it was necessary for the Indian workmen to wheel loaded barrows up the inclined plank leading to the top of the bin. The crew, protesting, averred that no one could run a wheel-barrow of earth up the incline to the hopper without breaking his neck before he arrived.

A brief interval of the palaver cost Gustav his temper. "Are you men or old women?" he asked. A wheelbarrow he heaped with stones, trundled it up the incline, and dumped the contents with a resounding clatter into the bin. "Tigre," a barrel-chested scion of the bandit clan of Tun, stepped forward. "I am as good a man as the Norwego," he declared, as he heaped another barrow to overflowing. Up the plank he went without a false step or movement. The emptied wheelbarrow he balanced on his head, then did a sort of cake walk down the descending incline.

Gustav had plucked the proper cord. Not one of the crew was willing to be outdone. Even old Sabas Lopez, with one eye gone and the other gray with cataract, begged to be allowed to prove himself when I ordered him to work with a shovel and leave his wheelbarrow to someone else. Within an hour the gang was adjusted to the new regime, and working splendidly. Like a procession of leaf-cutting ants in the neighboring bush, moved the men with the wheelbarrows.

The book is frankly written for the general public, and yet no attempt is made to gloss over the hardships or to minimize the difficulties which beset the conscientious archaeologist. The intimate conversational style permits the mixing of anecdote, scientific information, and conjecture in a way which causes no confusion. It is a human historical document which records the actions "behind the scenes" that made possible one of the great achievements of American archaeology, recorded in a two-volume scientific publication by the Carnegie Institution of Washington, bearing the same title as that used for this book.

Seventy illustrations and an index supplement the text.

CARL E. GUTHE

Selected Manuscripts of General John S. Clark Relating to the Aboriginal History of the Susquehanna. Edited by LOUISE WELLES MURRAY. (\$2.50 cloth, \$2.00 paper. Wilkes-barre: Society for Pennsylvania Archeology, I, 1931.)

The puzzling identity of a strange tribe of Indians found in possession of the Susquehanna valley by the first whites is the motivating theme of this volume. With all the zeal of a deputy from Scotland Yard, the author follows the devious trail of the evidence—through rare early journals, old maps, state archives, and up and down the winding course of the Susquehanna. A peculiar fortified mound on the New York-Pennsylvania border, known locally as Spanish Hill, is the first focus of inquiry. Obscure citations in Champlain's narrative of 1632, along with certain astounding excerpts from Captain John Smith's *True Travels*, serve to complicate the enigma.

After a quest extended into many quarters and an assiduous sifting and weighing of the evidence, the identity of Champlain's fighting *Carantouans*, of the *Andastes* of the Jesuit *Relations*, and the giant *Sasquesahanoughs* of Captain Smith is established to the satisfaction of the reader. Out of the welter of surmise and fact, the picture emerges of a remarkable aboriginal race of warrior-huntsmen.

By the end of the seventeenth century, under joint pressure from white colonists and imperialistic Iroquois, this people had vanished from the map. They are known to the archaeologist today only by the rare portrait pottery, carved tobacco pipes and other artifacts retrieved from burial plots and villages at various points along the Susquehanna. Recent recovery of vestiges of their culture near the Safe Harbor dam attests the timeliness of an advance into this neglected sector of our aboriginal history.

Student and tourist alike will find much of interest in the volume. The settlement of Swedes along the Delaware in Queen Christina's time, and the long boundary dispute between Penn and Baltimore—the latter hinging on the site of an early Susquehannock fort—are among the varied topics touched on in the evidence. The monograph is illustrated with nine early maps of Indian settlements, annotated by the author, three original surveys, and a modern map of the watershed of the Susquehanna. There is an index, a bibliography, and an appendix of Indian names prepared by a descendant of the Mohican Indians.

JESSIE WELLES MURRAY

OCEANIA

The Journal of Thomas Williams, Missionary in Fiji 1840-1853. 2 vols. G. C. HENDERSON (606 pp., 46 maps and ills. 42 s. Sydney: Angus and Robertson Ltd., 1931.)

To Professor Henderson belongs the credit of bringing forth from its resting place in the Mitchell Library, Sydney, a manuscript hitherto available only to students at the library. "The Journal of Thomas Williams, Missionary in Fiji, 1840-1853," is anthropologically a welcome work, presenting, as it does, much of the source material upon which Williams and Calvert's "Fiji and the Fijians" was based. This is interspersed, of course, in an account of missionary activities.

E. W. GIFFORD

Sorcerers of Dobu. R. F. FORTUNE. (318 pp., \$3.75. New York: E. P. Dutton and Co., Inc., 1932.)

Dr. Fortune's *Sorcerers of Dobu* is an exceptionally well integrated piece of work and will be of permanent value as a source book for those interested in Melanesia and in social anthropology. Dobu, part of the same archipelago of eastern New Guinea to which the Trobriand Islands belong, is considered the center of sorcery for that area. The author has given us a vivid account of the Black Art and shown keen insight into the way it pervades the whole of Dobu life. He has also supplemented Professor Malinowski's brilliant study of the kula by giving us the southern end of the ring, as seen from the Dobu point of view. Gardening, ritual exchanges, mythology, sex, beliefs about spirits of the dead are also described very fully and within the context of the social organization. Dr. Fortune has integrated his wealth of material so well that we get a very clear-cut and alive picture of Dobu society.

The integration comes out particularly well in the way he shows the interplay of kinship patterns of behavior throughout the whole social organization. To illustrate by one example, although many might be chosen, the unity of the village group as opposed to the totemic group is shown in relation to kinship terminology. Theoretically, members of the same generation and of the same totem in different villages would use the term brother and sister to each other, but actually the brother-sister terminology is usually restricted to the susu (the matrilineal group consisting of a brother and sister and her children) of one's own village and affinal terms are used for people outside the village. All through the discussion of kinship Dr. Fortune gives the exact range of terms and the actual behavior accompanying each term. He also very carefully shows how the same term used toward different people has a different emotional significance. Thus, when wana is used to denote the mother's brother, it implies a possessive ruling relationship and when the same term is applied to the husband of the father's sister it connotes an indulgent, non-possessive relationship (p. 73). Dr. Fortune is well aware of the fundamental principle, often overlooked, that the same kinship terms are not always sociologically equivalent. It requires keen observation to get these subtle differences.

One regrets, however, that Dr. Fortune does not furnish us with more details of the daily family life and of economic structure. We are given adequate material on marriage rules, sexual life, and kinship terminology within the family life, but we should like more of those imponderable details of the intimacies which come in the day by day living together of a small group of people under one roof. More information of certain aspects of the economic organization would have been of value, too. No mention is made as to whether currency exists or not, how ordinary trade is carried on (as apart from the kula and the ritual exchanges), and there is very little information on communal work. Of course, in six months (the length of Dr. Fortune's field work) no one human being can learn everything about a society. But since on certain subjects the author did get such full material, it is to be regretted that he could not have stayed another six months in Dobu, or gone there again, and given us some of the details possible only from a longer residence.

As a functional study it fulfills one of the first requirements, to portray a society as it is rather than according to some abstract ideal. The author describes the system and then, in showing how it works, gives the countless evasions and aberrations and never neglects "the practice in circumvention of the dogma." He gives exceptions to the rigid rules of residence; shows how magic is inherited sometimes in the patrilineal line instead of in the more customary matrilineal line; cites the case of an important and influential man who broke the law and married within his own village; and, in thus showing how the non-conformist as well as the conformist behaves, has added to the valuable monographs on living societies.

Theoretically, one may take exception to certain details of method and interpretation. The author's tabular and statistical method of balancing loss and gains of the family (marital grouping) as opposed to the susu grouping (p. 19) seems to me particularly unfortunate. Dr. Fortune concludes that "the social organization sets heavily toward susu predominance," because in his table he is able to list more losses and fewer gains to the family than to the susu. Even if one follows Professor Malinowski who, in the introduction, shows how from Dr. Fortune's own material, six more gains for the family could be listed, the method is still extremely faulty, because it assumes that all the factors listed are equally significant. But Dr. Fortune, in his table, is obviously comparing phenomena (such as residence in one house inheritance of property, rule of alternate residence in villages) which differ widely in their emotional significance and hence in their power to form those sentiments which give strength to the group. Common residence of a family in one house seems to me to far outweigh emotionally such a factor as inheritance through the susu. In my study of a Melanesian society in New Ireland having a rather similar social organization, I found that the extended family (which corresponds to the Dobu susu) functioned ritually more often as a unit than the family, yet my interpretation of New Ireland society is that the family is stronger than the extended family. This is of course, only a matter of opinion. But one necessarily questions Dr. Fortune's opinion of the weight of susu organization because it is based on a method in which he balances against each other psychological unequals as if they were equivalent.

Dr. Fortune has followed the first maxim of an honest field worker in telling us when his material is based on first-hand observation and when it is hearsay from an informant. He also frequently gives us the exact number of cases (and a description of the cases themselves) on which the material is based. These important details of method are so seldom given that one appreciates it when they are included in the text. However, one can not help but wish that Dr. Fortune would have given in equal detail his method of learning so perfectly the language by "contagion" in three months (p. XL). Does "contagion" include the painful taking of texts; the analysis of them with the aid of an interpreter (in the beginning, at least); the accumulation of a vocabulary; the very gradual learning to speak, etc., which most of us have to go through? Or does "contagion" mean something quite different and more akin to magic? Since Dr. Fortune used no English after his second day in Dobu

we wonder what language he did use. Does he mean that he began, as most of us do, with pidgin English, or did he start right off with Dobu? And why, since there were boys who had been away to work on a plantation and therefore knew pidgin English, did he not have an interpreter—the obvious short-cut in the beginning? Since learning a previously unrecorded language is a very difficult task for most field workers, one would be grateful for more details of Dr. Fortune's successful method of "contagion."

Another problem of method in which we are all interested is the field worker's personal relation to natives and his manner of establishing it. This must of necessity vary enormously from one field worker to another. The author presents us with a somewhat contradictory point of view of his relationship to the Dobu natives. On one hand we see him constantly participating in native life according to native rules—exchanging in the kula, having his own garden made with the appropriate magic, being on very friendly terms with a number of natives, etc.—and on the other side of the picture we see him using threats of government and mission interference to secure certain information about sorcery, and threatening a man with the gaol if he lies (pp 160, 161). Whether the method worked or not, it would seem very difficult for one person to maintain the double rôle of a sympathetic friend and recorder and even a participant to some degree in native life, and at the same time use the threat of force from a more or less antagonistic government or mission when it suited his pleasure or needs. Moreover, from the native point of view, my limited experience has shown that the native appreciates very highly consistency in the white man's behavior toward him.

But the faults of the book are minor. One may or may not agree with certain details of method and interpretation, but one must recognize that the author is an extremely keen and able observer; that he secured a wealth of excellent material on a short field trip; that he can integrate his material after getting it; and that he has a grasp of fundamental theoretical considerations. One feels indebted to him for a very excellent book and looks forward with pleasure to the account of his next expedition.

HORTENSE POWDERMAKER

ASIA

The Temples of Anking and Their cults. A study of modern Chinese religion. (A thesis in the history of religions presented to the Faculty of the Graduate School, U. of Penn., in partial fulfillment of the requirements for the degree of doctor of philosophy.) JOHN KNIGHT SHRYOCK. (206 pp., 22 plates. P. Geuthner, Paris. 1931.)

A sinological doctor's dissertation in this country may be regarded as an event, and there were to my knowledge three presented in 1931, all unfortunately printed in Europe. Dr. Shryock lived in China for nine years, eight of which he spent at Anking, capital of An-hui Province, where he made a study of the present-day religion of the people as well as of the temples of the city and the worship performed

in them. He gathered much oral information and supplemented it from readings in the local gazetteers and other source books. The idea of presenting the religious life of a well-defined community in a monograph is a happy one, as specific local cults and local variations of general cults are numerous all over China, and as there is no greater hazard in regard to so vast a country as China, than hasty generalizations and speculations.

Dr. Shryock has performed a useful task in publishing his data on the temples and gods of Anking. His account is readable and interesting throughout. None of these temples is very old, for practically all of them were destroyed in 1854 by the T'ai-p'ing rebels, who were zealous iconoclasts, and subsequently restored in a less pretentious style. They are therefore of no importance for the history of architecture, nor do they contain any works of art, but the religious spirit pervading these edifices has practically remained the same.

"The dragon may be an apotheosis of the crocodiles found in Chinese rivers" (p. 115). There are no crocodiles in China, but alligators exist in the Yangtze. Pi-hia Kung does not mean "Hall of the Blue Sky" (p. 93), but "Temple of the Princess of the Colored Clouds" (see Chavannes, *Le T'ai Chan*, p. 70).

The bibliography is somewhat incomplete. Grube's *Peking Volkskunde*, e.g., would have supplied many useful data. The mummification of Buddhistic monks, briefly alluded to on page 29, has been the subject of an interesting monograph by W. Perceval Yetts (*Notes on the Disposal of Buddhist Dead in China, Jo. Roy. As. Soc.*, 1911, pp. 699-725).

The volume is illustrated by twenty-two well-reproduced photographs; there is unfortunately no list of plates given, nor are they referred to in the text. The upper illustration in plate 2 is captioned "these seem to be the gods of literature." The middle figure, however, represents the Dragon King (Lung Wang), as is also indicated by the painted dragon on the background. The designation of the statue in plate 12 as Maitreya is simply due to modern Chinese ignorance of the Buddhistic pantheon, this figure simply represents the type of the genial, jovial monk and bears no relation to Maitreya. The fact that this book was printed at Lyons, France, may account for numerous misprints to which we are not accustomed in America. The author's transcription of Chinese will prove somewhat embarrassing to those unfamiliar with the language; it is largely influenced by the local dialect which he studied and in which final *n* and *ng* and initial *n* and *l* are confounded; he writes *shu* for our *hsu* or *su*, and unfortunately *u* so frequent in Chinese is throughout printed *u*. Some Chinese dates are wrongly computed; thus, the 7th year of Shun-chi is 1650, not 1656 (p. 91), the 8th year of Shun-chi is not 1652, but 1651, and the 6th year of Ch'ien-lung is 1741, not 1742 (p. 122), and other similar miscalculations.

B. LAUFER

Materials of the Mode of Life of the Lopars. An attempt to determine the nomadic conditions of the Lopars living in the eastern part of Kolsky peninsula. (State Russian Geographical Society, Karelo-Murmansk Committee.) V. V. CHARNOLUSKY, (162 pp., 1 map, R.4.50, Leningrad, 1930.)

The increase of anthropological activities in U.S.S.R. is due to many and varied causes. Not a little influence on the development and encouragement of ethnographical studies has derived from the political credo of the country, where literally speaking, "those who were last, become first." The natural tendency to help the underdog has stirred large and laudable interest in the "smaller nationalities." Numerous societies and special committees are organized, expeditions sent, scientists trained to study various natives of European Russia and Siberia; quoting Charnolusky,

not only as the representatives of peculiar cultures, but as brotherly groups, who need cultural help and protection. . . . On the basis of materials collected by specialists, scientifically treated and worked out, the State Executive Organs are preparing various practical measures for raising the cultural level of nomadic groups, for transforming them from the nomadic mode of life to the sedentary and in general by bettering their living conditions.

The work in question is the result of Mr. Charnolusky's two trips to the Lopars of Kolsky peninsula, in 1927, to obtain data on living conditions, within a definite area, of these reindeer-breeding nomads. Besides he had a general theoretical interest in nomadism and its determinants. After discussing its definition by various authors he gives his own conception, tending to reconcile differences of opinion

Nomadism is a special mode of living, closely coordinated with the mode of life of useful animals and plants, and with the necessary condition of "symbiosis"¹ of man with hoofed domesticated animals. The routes and places of habitation of nomads are determined not only by the mode of life of those animals, but also by the geographical conditions of places where, at certain times of the year, take place conglomerations of animals during the periods of mating, spawning, seasonal run of the fish, etc. or ripening of edible plants. This determines the periodical movements of nomads.

This definition is illustrated by the material obtained among the Lopars. The author gives the geographical conditions of the country and points out that the utilization of natural resources is dictated not by strictly practical impulses, but by peculiar religious and social attitudes toward animals and plants, as well as by the history of the domestication of animals.

The ethnic character of the region, with 466 Lopars, 70 Samoyeds and 2,547 Russians, is considered, as well as the resulting cultural influences. In order to ascertain the changes in population, both historical and culturo-economical factors are taken into account. The types of habitations, routes of movements, methods of recognizing and marking the road, reindeer-breeding and its influence on economic life, hunting and fishing, forests as important factors, and finally the yearly cycle of life of the Lopars, are discussed.

On the basis of this material the author attempts to determine which factors influence the transition from a wandering to a sedentary mode of life, and which tend to promote migrations. Making due reservations for the necessity of comparative study, he concludes that cosmic and climatic conditions are not very important

¹ If one is permitted to use the biological term here.

factors in the Lopars' changes of economic condition, but that the forests as the only supply of fuel necessitate the change of winter habitations.

Hunting seems to determine the boundaries of hunting territories, thus restricting the range of migrations. Fishing tends more than anything else to promote a sedentary life, the very location of lakes and rivers making necessary a stay in one place during the fishing. Various periods of spawning, assuring concentration of fish, influence the nomads to adopt more or less permanent habitations and originate clan ownership of those places. Hunting the wild reindeer, which migrate in definite directions, led the Lopar hunter southward into the forests, while the inclination of the domesticated reindeer for south-north movements brought him back to the seashore. Mr. Charnolusky concludes that

the economic importance of combining reindeer breeding with the fishing, and the very essential dependence on reindeer as the sole means of reaching distant hunting and fishing territories, form the axis on which revolves the life of the nomadic Lopar.

EUGENE GOLOMSHTOK

The Mysore Tribes and Castes. Vol. IV. The Late H. V. NANJUDAYYA and RAO BAHADUR L. K. ANANTHAKRISHNA IYER. (viii, 677 pp 20s Mysore: Mysore University; Mysore Government Press, Bangalore, 1931.)

This new volume on Mysore ethnography from the pen of Mr. Iyer will undoubtedly be a valuable addition to the knowledge of Southern India. The author is known in the United States not only from his work on Cochin ethnography but also from his work on Syrian Christians which was recently reviewed in these pages (AA, n.s., 32, 1930, p. 318 sq.)

The plan adopted for the presentation of the material is an admirable one for reference purposes. Tribes and castes are arranged alphabetically, and the marginal notes indicate special characteristics of each particular tribe. The subsections deal principally with notes on the origin of the tribes or of the castes, their internal structure, marriage customs and ceremonies, puberty customs, laws of inheritance, tribal organization, religion, death ceremonies, feasts and festivals, and dress and adornment. But very little has been said about their physical characteristics. The present volume begins with "Kotte Okkalu" and goes as far as "Vodda."

Mysore as a province is especially interesting to anthropologists because of its geographical position. It is in this part of India that one would expect to find Dravidian culture in a more or less pure form. From a perusal of the book it seems that the culture of all the tribes dealt with is essentially Hindu, although Dravidian traits are interspersed throughout. Taking the death ceremonies for example, we find that no fewer than twenty-eight tribes, professing the Hindu religion, bury their dead. The funeral ceremonies of these twenty-eight tribes are, however, Hindu; in most cases the period of ceremonial pollution is ten days, after which, on the eleventh day, they bathe and put on new clothes.

The marriage customs of nearly all the tribes in the present volume are the same as among the Hindus, with slight variations here and there. Traces of certain ancient

forms are still to be met with in Mysore; thus, among the Kuruba, promiscuity is tolerated, and, in fact, it seems to be well recognized under certain conditions (p. 48 *sq.*). Many other interesting facts are also brought out.

From the very nature of the work it is necessarily sketchy, but this does not decrease its value in any way. The book, as I take it, is intended primarily for government officials going to India with little or no knowledge of the people; and for them it should prove invaluable. On the other hand, if Mr. Iyer himself or some one familiar with Southern India were to study each particular tribe it would be a real service to anthropology.

Finally, it seems to me, that the illustrations are chosen more for "effect" than for any other purpose.

BIREN BONNERJEA

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DISCUSSION AND CORRESPONDENCE

PROVERBIAL EXPRESSIONS AMONG THE CROW INDIANS

THE dearth, if not complete lack, of proverbs as a distinct literary category among the American Indians has been repeatedly stressed. This, however, does not imply a complete absence of proverbial sayings. As Professor Boas has pointed out in his *Primitive Art*, such traditional phrasings are found on the Northwest coast, though their number and significance in aboriginal life do not remotely approach those characteristic of, say, African Negroes.

Some fifteen years ago I recorded two comparable sayings among the Crow Indians, which, however, I never published. During a visit in the summer of 1931 I corroborated the earlier information and secured some additional statements. It seems to be not altogether unusual for a Crow to refer to some well-known traditional or mythological episode and to make a personal application. So far I have been able to record four expressions of this type, all obviously conforming to the same pattern. The first two are those recorded in identical form on an earlier field trip

(a)

a · c dut'u · 'rək' hira' k'ara'k'uci · 'riky.

His scalp when they had taken then he ran, that he is like.

(Free translation: He is like the man who did not run away until after he had been scalped.)

This is, of course, applied to any one who is belated in his undertakings. It is said that the Crow once scalped an enemy and, on looking back after a while, saw him scurrying off.

(b)

ak'birikyuxci' dahi'kyuci'riky.

The helper poor he is like.

(He is like the poor helper.)

This is applied to one who proffers his assistance but turns out to be a bungler. I could get no light on the origin of this saying.

(c)

apa · 'ri du'tsi'k'uci'riky.

Porcupine-taker he is like.

(He is like the one who wanted to catch the porcupine.)

This applies to persons who persist in a hopeless enterprise. The reference is to an incident in the Old-Woman's-Grandchild myth, one of the most popular of Crow hero tales: a girl is lured up a tree in pursuit of a porcupine, whose master (the Sun) causes the tree to grow miraculously until it reaches the sky.

(d)

basa' 'dək bire · 'citu · k'uci · riky.

The turtle into the water thrown he is like

(He is like the turtle that was thrown into the water, i.e., while pretending to be afraid of it.)

This is applied to a person feigning not to like what he really craves.

This suggests that the Crow may have some knowledge of the fairly wide-spread story of Turtle's Warparty, though I never recorded it among them.

In this context may be quoted two phrases used in order to characterize an impossibility:

(a)

isa · cpi' te tsi · 'sua ha' tskitu · 'rək or kuruxa' ruorək

Cottontails their tails when they are long or when they are dragged.

(When cottontails have long tails; or drag their tails on the ground)

(b)

ba' · tsiə a · 'pə də · 'əxdək'.

Pine leaves when they are yellow.

(When pine needles turn yellow.)

ROBERT H. LOWIE

NOTE FROM NEW GUINEA

Aliatua, Wiwiak District, New Guinea.

April 21, 1932.

We are just completing a culture of a mountain group here in the lower Torres Chelles. They have no name and we haven't decided what to call them yet. They are a very revealing people in spots, providing a final basic concept from which all the mother's brothers' curses and father's sisters' curses, etc. derive, and having articulate the attitude towards incest which Reo outlined as fundamental in his Encyclopedia article. They have taken the therapeutic measures which we recommended for Dobu and Manus—having a devil in addition to the neighbor sorcerer, and having got their dead out of the village and localized. But in other ways they are annoying: they have bits and snatches of all the rag tag and bob tail of magical and ghostly belief from the Pacific, they are somewhat like the Plains in their receptivity to strange ideas. A picture of a local native reading the Index to the Golden Bough just to see if they had missed anything, would be appropriate. They are very difficult to work, living all over the place with half a dozen garden houses, and never staying put for a week at a time. Of course this offered a new challenge in method which was interesting. The difficulties incident upon being two days over impossible mountains have been time consuming and we are going to do a coastal people next.

Sincerely yours,

MARGARET MEAD

ANTHROPOLOGICAL NOTES AND NEWS

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE appointed at its last meeting a committee to consider the question of re-editing "Notes and Queries on Anthropology." In order to make this publication as widely useful as possible the Committee would be grateful for any suggestions for amendment or addition to the present edition.

Such suggestions should be sent to

The Secretary, Committee on Notes and Queries
Royal Anthropological Institute
52, Upper Bedford Place
London. W. C.

THE AMERICAN COUNCIL OF LEARNED SOCIETIES announces grants in aid of research, to assist research by trained scholars; and research fellowships in the humanities, to provide further opportunities and experience in humanistic research to younger scholars of ability. Inquiries should be addressed to

The Secretary for Fellowships and Grants
American Council of Learned Societies
907 Fifteenth Street
Washington, D.C.

THE 25TH INTERNATIONAL CONGRESS OF AMERICANISTS will be held in La Plata, November 20 to 26, 1932, in accordance with the resolution passed at the Hamburg meeting of the Congress. The topics to be featured naturally stress South American problems but also include cultural relations between the two main divisions of the New World and the cultural relations between America and Asia. The general secretary of the session will be Professor Milcíades Alejo Vignati of La Plata.

ON JULY 22, 1932, DR. DANIEL FOLKMAR died in Washington. He was born in Roxbury, Wisconsin, studied at Harvard, Clark, and other universities. He received the certificate of the École d'Anthropologie of Paris in 1889. He was Lieutenant Governor in the Philippine Civil Service from 1903 to 1907 and later special agent for the Immigration Commission and Census Bureau in Washington. His work was largely along statistical lines.

FRANCIS LA FLESCHÉ, ETHNOLOGIST, for thirty years connected with the Bureau of Indian Affairs, and associated since 1910 with the Smithsonian Institution, died on September 5 at the age of seventy-five years.

WE REGRET TO ANNOUNCE the death of Baron Erland Nordenskiöld, which occurred early in July, 1932. We hope to publish an adequate obituary notice in due time.

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